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LECTURES ON CHEMISTRY,

BY

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LECTURE XXXIII.

On the Oxides, Ores and Salts of Iron.

AT the conclusion of the last lecture, I stated to you that iron combined with two definite proportions of oxygen to form a protoxide and a peroxide, and I mentioned to you what these were.

Now, the protoxide may be obtained by precipitating a solution of the sulphate of iron by potash, by washing the precipitate out of the contact of air, and by drying it at a red heat. This protoxide is of a black colour, and is sparingly soluble in ammonia and the carbonated alkalies. There is a very beautiful mode of obtaining this oxide, contrived by Dr. Ingenhous, namely, the burning of iron in oxygen gas, which I shall show you. Here is a piece of iron-wire, to the extremity of which a bit of sulphur is attached for igniting it, which must be done just as you plunge it into the gas, and you should see that the stopper of the jar is sufficiently close to prevent the escape of oxygen. The wire, as you see, soon becomes red-hot, then melts, and vivid scintillations of metal are thrown off, which become quenched as they fall into the water beneath. This protoxide was formerly known in pharmacy, under the name of *martial æthiops*, and was procured by moistening iron filings with a small quantity of water, and exposing them to the air for a day or two, the oxide was then separated by washing. This oxide is of a black colour, is almost insoluble in water, and has little or no taste.

Now, to obtain the *peroxide*, you boil the protoxide in nitric acid, precipitate the solution by ammonia, and it is then to be washed and dried at a low heat. This oxide you will recollect, I stated, was composed of one proportional of metal, and of one and a half of oxygen, and was formerly called *saffron of Mars*. I need not go into an explanation of the reasoning by which this conclusion was arrived at; but this, I believe to be the fact. It has been supposed, by Gay-Lussac, that there is an intermediate compound between the two I have named; but the evidence upon this point has not been of a very satisfactory kind, and I am inclined to regard it rather as a mixture of the protoxide and peroxide, than as any definite, compound of the metal with oxygen. The *native oxides* of iron constitute a very important and extensive class of minerals which vary in colour, and this is owing, in some cases, to the degree of oxidation in which they may be found, and in other cases, to their mere texture. Some of the native oxides are magnetic, and those which contain most oxygen are least attracted by the magnet. The richest ore is the *magnetic iron ore* found abundantly in Sweden, where it is used for the manufacture of the fine bar iron, and particularly for the manufacture of steel. It occurs massive, of a slight metallic lustre, and is sufficiently magnetic to take up a needle and fine iron filings. A variety of the native oxide is found crystallised in the island of Elba, and among the volcanic products, and is called *iron glance*, or micaceous iron ore. Near Ulverstone, in Lancashire, there is a variety of iron ore called *hæmatite*, or red iron-stone, and it occurs in great quantities in that neighbourhood, in globular and stalactitic masses. Most of our iron plate and iron wire is made from this ore.

Mr. Brande then showed the magnetic attraction of the different ores, by exposing them to a polarised needle; and it was shown that those ores, which contained least oxygen, were attracted by the magnet.—Now, when you come to *clay iron ore* and the *peroxide* of iron, these contain little iron, and are, therefore, unimportant sources of it. Clay iron ore contains not more than 25 or 30 per cent of iron, yet it is the ore principally worked in this country. You may ask, why we use this ore when we

have others so much richer? The reason is, that it is found in great quantities in the immediate vicinity of coal and lime-stone, which are advantages sufficiently great to induce the manufacturer to work this, comparatively speaking, poor ore. It may be remarked here, with respect to the two classes of the salts of iron, that the salts containing the *protoxide* are green, and crystallisable; that they absorb nitric oxide when in solution, and absorb oxygen with great avidity by exposure to air, and acquire, in consequence, a red colour. The *peroxide* forms a class of salts with the acids, which are uncrystallisable generally speaking, soluble in alcohol, but which do not absorb oxygen from the air or nitric oxide when in solution.

This brings us to the *chlorides of iron*.—Chlorine, like oxygen, combines with the metal in two proportions, forming a protochloride and a perchloride. In the protochloride the combination takes place in the proportion of 1 of iron 28, and 1 of chlorine 36, giving 64 as its equivalent; and, in the perchloride, there is one proportional and a half of chlorine 54, combined with one of iron 28, giving 82 as its equivalent.—*Now*, with regard to the *protochloride*, you may obtain it by dissolving iron in muriatic acid, and evaporating the solution to dryness out of the contact of air; the protochloride then assumes a red colour, and, if intensely heated, a black colour. You may obtain the *perchloride* by burning the metal in chlorine, but you generally, at the same time, obtain also a little of the protochloride. As soon as the gas comes in contact with the metal, it begins to act upon the metal, but not intensely until heat is applied; a kind of crystalline substance then arises from the combustion, which is the perchloride. If we now act upon these two chlorides by water, we shall obtain, in the one instance, a *protomuriate*, and, in the other, a *permuriate of iron*, which are both dissolved by the water. They are difficult to crystallise, but the *protomuriate* may be obtained in small green crystals, which are not permanent, but, upon exposure to air, fall into powder, and become a permuriate. You may obtain the same compound by dissolving the protoxide of iron in muriatic acid, and evaporating it to dryness. The *protomuriate of iron* is not a salt of any importance. Now, with regard to the *permuriate*, or, *as muriate of iron*, as it is sometimes called, it is used occasionally in the arts, and sometimes in medicine. Dissolved in spirits of wine, it furnishes a good chalybeate preparation, and such is the *tinctura ferri muriatis* of the pharmacopœia. The composition of the protomuriate is 36 of the protoxide, and 37 of muriatic acid, or one proportional and one; and the permuriate consists of one proportional of peroxide 40, and one proportional and a half muriatic acid 55.5, so that its equivalent is 95.5; and here is the difficulty in applying the theory of chemical proportions to the salts of iron. *Iodine* and *iron* combine, and you obtain an iodate and an *hydriodate of iron*, which are of a green colour.

Iron and *nitric acid* act very powerfully upon each other, so powerfully, that you can scarcely obtain a protonitrate of iron. This, which you see here, is a *protonitrate of iron*, and is composed of one proportional of oxide 36, and of one of nitric acid 54; and the *pernitrate*, or oxynitrate, is composed of one of peroxide 40, and of one and a half of acid 81. *Sulphur* and iron may be united together, and two sulphurets of iron may be produced; they may be easily fused together, and the trick which you have seen schoolboys perform of melting a poker, by heating it red hot, and then rubbing it over with a stick of sulphur, is an example of the formation of a sulphuret of iron; the sulphur uniting with the iron to form the black or protosulphuret. The sulphuret and the bisulphuret are, in their composition, in perfect accordance with the theory of proportionals; the sulphuret being composed of one proportional of metal, and one of sulphur, and the bisulphuret of one of metal and two of sulphur. The sulphuret is used in the laboratory for the formation of sulphuretted hydrogen, and for the production of the protoxide of iron. The bisulphuret, or *pyrites*, is met with in great abundance in Nature, in a great variety of crystalline forms, of which the cube is the primitive. They are often found in masses, and in detached nodules, and being washed out of the soil, and found upon the surface, are called by the people thunderbolts. We never think of obtaining the metal from these ores. Here are also two *sulphates*, the one a *protosulphate*, generally called green vitriol, in the dry and in the crystallised state; in the dry state, it is in the form of a white powder, and the crystals are of a green colour, and rhomboidal figure. It consists of one proportional of protoxide 36, and one of sulphuric acid 40, so that its equivalent is 76. In the crystallised state, 76 parts of the dry salt unite with 7 proportionals of water 63, so that its equivalent is then 139. This salt is soluble in twice its weight of water at 60°. It is often called *copperas*, and is obtained in great quantities, by simply exposing the sulphurets to air and moisture. It is characterised by its green colour, by its solubility in water, and by its styptic taste. Its solution in water is green, and if you leave a little of the sulphuret from which it has been obtained in the solution, it may be retained in a state of protosulphate; but if you expose it to air, or to any

oxidizing agents, to light, or to nitric acid, it is readily converted into a *persulphate of iron*.

Now the *persulphate* of iron is easily obtained. When crystals of the protosulphate are exposed to heat, the water of crystallisation first passes off, then sulphurous acid, and then sulphuric acid, and there remains in the vessel a brown dry powder, called formerly the *colcothar of vitriol*, which is the peroxide of iron, and this, if mixed with diluted sulphuric acid, forms the persulphate. Sometimes the protosulphate is found native in mines, that is to say, in situations where the sulphurets have been decomposed by the action of the air and water. Some time ago, Mr. Hatchett thought that he had found some crystals of the persulphate; but it was afterwards ascertained, that these crystals were compounds of the protosulphate and ammonia; it was, therefore, a triple salt, and not, as he supposed, a persulphate of iron. It is divested of the inky taste of the other salts of iron, and, therefore, has been proposed as a substitute for them in medical practice.

Iron combines with phosphorus; and both its oxides unite with phosphoric acid, forming *protophosphate* and *perphosphate of iron*; you may easily obtain them by adding to the solutions of iron a solution of phosphate of soda. The protophosphate of iron is of a pale blue colour, and the perphosphate white. The protophosphate is occasionally found native, in large quantities, in bog earth, in various parts of the kingdom; and at one time a large quantity of it was dug up, and supposed to be native Prussian blue; but it turned out to be only clay coloured with the protophosphate of iron. It was once conceived to be the colouring matter of the blood, that is to say, the *perphosphate*; but the colouring matter of the blood appears to depend upon the presence of some peculiar animal principle, and not upon any combination of iron with the blood, as I shall show you by and by.

Carbon unites with iron, and forms some very valuable compounds; all the varieties of *steel* are essentially carburets of iron; and when you remember its numerous applications, you may judge of the value of this compound. Another compound of iron and carbon is *plumbago*, or *black lead*, as it is commonly called, which is a very valuable substance; 100 parts of it are composed of 95 carbon, and 5 of iron; and if you reverse this proportion, you will nearly arrive at the composition of *steel*, it being composed of 95 iron, and 5 carbon. Now, with regard to this substance, *graphite* or plumbago, it is met with in great quantities at Borrodale in Cumberland, embedded in masses of slate and grauwacke. It is ground down into powder, and melted with sulphur for the manufacture of black lead pencils, as they are called, for carpenters; and a coarser variety of it is used for the manufacture of crucibles and earthenware; the crucibles are called black lead crucibles. It is also used as an ingredient in compositions for covering cast iron, and for diminishing friction in machines. Plumbago is very infusible, and is very difficult of combustion, which are curious properties conferred upon the carbon, by the small quantity of iron with which it appears to be combined. In some experiments made by Messrs. Stodart and Faraday on the hardening of steel, a substance was obtained very analagous to plumbago, but the composition of it was never ascertained exactly. I shall postpone what I have to offer to you, on the properties and quality of steel, until the next lecture. When iron is subjected to the action of carbonic acid, a carbonate of iron is formed. There are two carbonates of iron, a *protocarbonate*, and a *percarbonate*; and these two salts are very easily distinguished from each other, by the usual characteristics of the proto and the per salts of iron, the first being green, the second red. Now, the protocarbonate, if collected, washed, and dried, passes into the state of a percarbonate, but the preparation which we have in the *Pharmacopœia*, under the name of *ferri carbonas*, is little more than the *protoxide of iron*, or iron having lost its carbonic acid. The protocarbonate exists in a number of mineral waters, and it appears to be the best for medicinal purposes; a pint of such water seldom contains more than a grain or two of the salt; but I think, that even that minute quantity is efficacious, much more so than the large doses of iron which have been attempted to be given. When you wish to imitate mineral water, you should always use the protocarbonate; if you use the percarbonate, you will obtain a very different result, which will not at all approach to the character of the natural chalybeate water. And this induces me to pass an eulogium upon the artificial waters made at Brighton, where the greatest care is taken, as I have had an opportunity of seeing, to produce, under the superintendance of adequate chemists, and by means of appropriate machinery, the most correct imitation of the native waters. And I can see no reason why the imitation of the chemical nature of the native mineral waters, should not produce exactly the same effects on the constitution, as the native water itself; especially if their use should be combined with the respiration of good air, and the enjoyment of exercise and other amusements usually practised, in what are called watering places. I omitted to

mention, that the crystals of the proto-carbonate of iron are rhomboidal.

Now I have gone through the principal salts of iron, and I have nothing further to remark upon, than the application of the theory of proportions to the salts of iron, the theory tallying exactly in its application to the proto salts, but not with the per salts.

There remains for our consideration, a curious compound of iron and cyanogen called *Prussian blue*, the varieties of iron and steel, and some general remarks on the best tests for detecting the presence of the metal.

Lecture XXXIV.

On the Salts of Iron; and on the Manufacture of Iron and Steel.

If you act upon the salts of iron by the hydrocyanate of potash, you produce from the salts containing the protoxide, a white precipitate, and from those containing the peroxide, a deep blue precipitate, which is a *ferrocyanate*, containing the peroxide of iron, and which has been called *Prussian blue*, from the circumstance of its having been accidentally discovered by a dyer in Berlin; a substance, which is extensively used in the arts and in the laboratory. The mode of obtaining Prussian blue, is usually as follows:—subcarbonate of potash and some animal substance, such as hoofs, horn shavings, or dried blood, are mixed together in about equal quantities, heated red hot, and kept in that state for some hours; and when quite cold, six or eight parts of water are poured upon the mixture. The filtered solution is found to contain *hydrocyanate of potash* along with carbonate of potash, and some other products. It is then mixed with a solution of one part of sulphate of iron, and two of alum, when a green precipitate falls down, which, by frequent washings with diluted muriatic acid, acquires a fine blue tint, which is the Prussian blue. The aluminous earth contained in the alum gives a body to the precipitate, which improves it as a pigment. The black matter remaining after the combustion of these materials, is a cyanuret of potassium, which, by being acted upon by water, is converted into a hydrocyanate of potassa; a little carbonic acid and ammonia are also formed, the latter of which is expelled by heat, and we therefore have a carbonate and hydrocyanate of potassa, which, when added to a solution of the sulphate of iron, form a precipitate of oxide and *ferrocyanate of iron*; the oxide may be removed by the dilute muriatic acid. A variety of opinions have been entertained respecting the nature and composition of Prussian blue, but this appears to me to be the simplest and most correct view of it.

Now, when Prussian blue is acted upon by boiling it with potash, the oxide of iron is separated, it loses its blue colour, and on evaporating the solution, a triple salt is formed, containing hydrocyanic acid, potash, and oxide of iron, which has been called *ferroprussiate of potash*, and *ferrocyanate of potash*. This salt forms yellow cubic and tabular crystals, which are insoluble in alcohol, more soluble in hot than in cold water, permanent, and of a peculiar taste. Here is a very fine specimen of the crystallized salt, which was presented to me by the late Mr. Parkes. The proportions in which the elements forming this salt are mixed, I shall not endeavour to lay before you, since chemists have very much differed in their opinions respecting it; but that this is the nature of its composition, those who are best acquainted with the salt, are agreed. A very few years ago, this salt was made only in small quantities, as a matter of curiosity in the laboratory, but it is now manufactured very largely in Glasgow as a mordant for the calico printers, which we shall have to consider hereafter.

If you digest Prussian blue with *strontia*, and *baryta*, and *magnesia*, *ammonia*, *soda*, and *lime*, in water, you obtain ferrocyanates of these alkalies and earths.

The ferrocyanate of potash is used as a test for the presence of many of the metals, by the colour of the precipitates thrown down, and a very valuable test it is. You have, therefore, in the elementary works on chemistry, tables giving you the different colours of the precipitates; but I must caution you against too much confidence in these tables, because the colour of the precipitate will very much depend upon the salt having an excess of acid, or an excess of base, on its being a proto, or a persalt. Here is a table showing you the colours of some of the precipitates obtained by this salt. Manganese affords a white precipitate; iron, the protoxide, a pale blue; the peroxide, Prussian blue; zinc, a yellowish white; tin, the protoxide, white; the peroxide, white, which becomes yellow, and then bluish; copper, a deep brown, and so on; and it was at one time proposed to give it the name of calorific acid, from the number of tints which it produces in combination with the oxides of the different metals. So much, then, for Prussian blue, and the ferrocyanates generally.

With respect to the general characters of the salts of iron, they are soluble in water, and are, for the most part, of a green colour, becoming brown on exposure to air; they furnish a blue precipitate with ferrocyanate of potash, and a black precipitate on the addition of galls, or any other vegetable astringent. They will be distinguished by their styptic, austere, inky taste, and by the

great facility with which they blacken a great many vegetable bodies. The sulphuretted hydrogen gas, and the pure sulphurets, give no precipitation to the salts of iron; nor do the iodides.

In this Lecture, in connexion with the action of vegetable astringents on the salts of iron, I am in the habit of showing the class the composition of *writing-ink*, and I have found the following proportions of the materials the best for its manufacture:

Galls	8 oz.
Logwood	4
Gum	3
Sulphate of iron	4
Sulphate of copper	1
Cloves	¼

The galls, logwood, gum, and sulphate of iron, powdered, should be boiled in twelve pints of water to six; and toward the end of the boiling, the sulphate of copper and cloves should be added. The mixture should be allowed to stand twenty-four hours, and then decanted and bottled for use. The copper gives the ink a bright black appearance, and the cloves a pleasant odour, and prevent it from getting mildewed on its surface.

Few of the *alloys* of iron are of any importance. We shall mention the alloy of iron and tin to form tin-plate on another occasion; some few other alloys have been used, but few are of any importance. The *varieties of iron* met with in the arts is a matter of considerable importance, which will lead us to speak very briefly of the *manufacture* of iron. With regard to *tin-plate*, I may just say, that it consists of thin plates of iron, which are dipped into melted tin, so as to give them the appearance of tin. Before considering the varieties of iron, I may call your attention a little more in detail to *steel*, which is a carburet of iron, containing five per cent of carbon, and 95 of iron; and there are generally present minute portions of other substances.

The manner of *making steel*, is this: a bar of iron is heated in a vessel containing charcoal, and it is kept exposed for a long time to the heat; it is ultimately found, that the bar of iron has been penetrated, or permeated, as it were, with the vapour of carbon, which has combined with it throughout, and formed carburet of iron. When withdrawn from the furnace, it is found to be blistered; its fracture and general appearance are altered, and it is then known under the name of *blistered steel*. The bars of this first manufacture are heated again, and drawn down into smaller bars by powerful machinery and beaten, and it is then called *tilted steel*; which, when broken up and welded, and drawn into bars, forms *shear steel*; and this, when melted along with some vitrifying flux, and cast into bars, forms what is called *cast steel* or *English steel*. The properties of steel are exceedingly singular, its texture varies in different specimens; sometimes it presents more or less of a crystalline fracture, and silky in others; and the appearance of the fracture leads the artist to apply it to particular purposes. You must see, in the selection of steel for any particular use, that the fracture is regular; and if you see a spot in it more white than another, wipe it over with nitric acid; and if the spots become darker, the specimen is not good steel. It melts more readily than iron, and it admits of welding, or uniting with iron, at high temperatures. It has a great variety of curious properties, on which its value in the arts, in a great measure, depends. Here is a piece of steel which is pliable; and if I heat it, and allow it to become cold again slowly, I *anneal* it, as it is called, and it is still more flexible than before; but, by rapidly cooling it, it becomes so brittle, that you may break it like glass. Now steel, in this excessively hard state, is a very intractable substance; but if it be gradually heated up to a certain point, it again acquires a degree of softness; and if you heat it red hot, it becomes as soft as before. I find that, at a temperature of about 430°, it begins to soften; and that, at 6 or 700, it becomes very soft, and, therefore, by proper management, the artist can give it any degree of hardness he may require, and this process is called the *tempering* of steel. The manufacturer of a razor, for example, forges out the blade in the soft state of the metal; he would then finish it, and render it hard by quenching it in water; after which it is heated, until he sees by the colour of the blade, that it is brought down to the degree of hardness required. A razor, and a dinner knife, may be made of exactly the same kind of steel; but the difference in their hardness depends upon their tempering. Experience has taught us, that differences of temperature give to steel peculiar degrees of hardness, fitting it for particular purposes; and, in the common way, the process of tempering consists in heating oil or mercury, or fusible metal, up to a certain point, in which a thermometer is placed, and the best manufacturers are now guided entirely by the thermometer in the process of tempering; whereas, formerly, the instruments were heated without any thermometer, the workmen being guided only by the change in the colour of the steel, which is a very slovenly, and often fallacious test. Polished steel at 430, begins to acquire a pale straw coloured tint, and from that to 465, it becomes so far tempered, as to be fit for razor blades, and instruments of that kind, requiring delicate edges. From 480 to 500°, it acquires a

buff tinge, and becomes softer; it is now soft enough for pen-knives, and certain surgical instruments, and other purposes; at 500°, or from 515 to 530°, it becomes yellow, and begins to acquire a purple tint; from 530 to 550°, it becomes decidedly purple, and is then fit for common knives, and other instruments, requiring great toughness. At 550, or from that to 580°, the steel begins to acquire a blue colour; and it is soft enough in that state for a number of purposes, especially for thin blades intended to have great elasticity, and little hardness; and, at 590°, it becomes so soft, as to be bent without any risk of breaking, as is the case in watch-springs. This is the history of the tempering of steel; and you see, that by these differences of temperature, it acquires various degrees of density and colour; but what the nature of this change is, we do not know; you see, however, how valuable it becomes, in consequence. There is not much difficulty in tempering a bar, or thin plate of steel; because, when you heat it red hot, and plunge it into cold water, you obtain an uniform degree of hardness throughout; but when you have to deal with a mass of steel, as with a die, for example, it is a long time before the whole of the heat escapes, and you have a hard crust of steel outside, whilst the interior is soft; you have it only case-hardened; and it sometimes happens, that these are broken by violence, like the coats of an onion, into layers,—layer after layer, showing a soft nucleus in the midst of the die. I have now given you the outline of the formation of steel, of the modes of acquiring different degrees of induration, at different temperatures. A very curious process, for making steel, has been lately adopted by Mr. Mushet, of Glasgow, by passing coal gas through vessels, when red hot bars of iron are exposed to its action, and it may be a preferable mode, in some cases, to the other.

Now then we arrive at the *different kinds of iron* found in the arts, and to the modes of obtaining them.

Iron seems to have been known at remote periods, for we find, in holy writ, furnaces and modes of reducing the metal, spoken of. There can be no difficulty in obtaining iron from the pure oxides of the metal, by mixing the oxide with charcoal, and submitting the mixture to heat. The oxygen will be carried off, and the globules of the metal collected; and in this way it was, for a long time, exclusively obtained in this country and elsewhere, until our manufacturers were brought to a stand still for want of charcoal, and we were, for a long time, dependent on Sweden for a supply, especially for the purpose of making steel. About seventy or eighty years ago, the attention of several iron manufacturers, in this country, was called to the subject of manufacturing iron with common pit coal; they used the poor ores of iron; they converted coal into coke, dispelling great quantities of sulphur and other impurities, and they obtained a tolerable iron, but still inferior to that imported from abroad. At length it was ascertained that the iron ore, poor as it was, if used with coal, might be used conveniently for making iron; experiments were made, the result of which was, that the inventor of the experiment lost much money. Then it was found, that with the coal in the adjoining strata there was a great quantity of nodules of clay iron stone, which is, as you recollect, a very impure oxide of iron, and this was tried, but the experiment failed also; the metal was found diffused in globules through a very intractable mass, which prevented it from running down in the furnace, and this difficulty was not overcome for a long time, until it was discovered, that the lime stone found in the neighbourhood of the ore combined with iron stone in the furnace, and melted it down, which was a very valuable discovery. The process now employed is this: the ore is first roasted, by which process it crumbles down into a reddish substance; this is mixed with a certain quantity of lime stone, by weight, and also with a certain quantity, by weight, of coke, when the mixture is thrown into a large furnace, and exposed, as rapidly as possible, to an intense heat. The consequence is, that when the coke, lime, and iron stone are exposed to a high temperature, the lime and clay combine to form a kind of glassy compound, and the coke acts upon the iron and deoxidises it; and the globule of metal, falling through the mixture, is collected in a basin in the bottom of the furnace, which is now and then tapped, and the metal, collected in moulds, is then called *cast iron*. The height of a furnace for this purpose is about sixty feet, and when the fire is once lighted it is never allowed to go out, and it continues fit for use for six or seven years, if well built. The substance produced by the union of the limestone and clay of the iron ore is called the *slag*, and the due admixture of the coke, lime stone, and ore is a matter of great nicety, and one upon which the success of the process depends. The workmen generally know, by the appearance of the slag, what addition or alteration to make in the charge of the furnace. The furnace is tapped once in six or eight hours; and of this cast iron there are two principal varieties, the grey pig and white iron. The *grey pig* contains oxide of iron with the metallic iron, and some other metals, as silicium and calcium, and other substances, differing considerably in their relative pro-

portions. By carefully testing, and by attending to the matrices in the furnace, the iron thus obtained is fit for a great variety of purposes in the arts. It is not very brittle, and is opposed to *white cast* iron, which is merely used for its weight, and is therefore a comparatively useless metal. The *grey iron* requires to be submitted to other processes, in order to convert it into a more useful form of metal; and this purification consists in submitting it to intense heat in a reverberatory furnace, called a *refining* furnace, where it is stirred whilst in a state of fusion, so that every part may be exposed to the air and flame, and this operation is called *puddling*. This process is continued until the mass becomes tenacious, and it is then submitted to the rolling mills, where a large quantity of extraneous matter is forced out, and the metal is rolled out into malleable bars. These bars are afterwards broken up, *fagoted*, as it is called, and again submitted to the refining furnace, where it undergoes another puddling, and being then again submitted to the rolling mills, it forms the best *bar iron*.

The discovery of this process of obtaining iron must be considered an important one for that branch of manufactures in this country, and, in its details, is very interesting and curious; but what I have given you is of course only a bare outline of the subject.

In the next lecture we shall begin the description of the properties and salts of zinc, tin, and cadmium.

FOREIGN DEPARTMENT.

REPRODUCTION OF BONE.

The substance from which new bone is formed; the changes which it undergoes; its relation to the periosteum; the conditions which retard or promote its formation, are the circumstances deserving of our most attentive consideration.

The first appearance which presents itself, after a fracture, is an extravasation of blood, extending along the whole limb, and covering the muscle and the fracture. The blood thus extravasated has been supposed, by some, to have some part in the reproduction of the bone, and the formation of the callus.

Macdonald has treated the subject in this way, and examined the changes with considerable minuteness. The blood appears to come principally from the medullary structure of the bone, not from the vessels of the osseous substance itself; because the blood is not found on the edges of the bone. Exuded blood is thus supposed to be the basis of union; the red part becomes absorbed, and the remaining portion converted into gelatine. The periosteum inflames and becomes thickened; and in the gelatine effused beneath it, the first points of ossification may be observed, not close to the fracture, but at some distance from it; on the surface of the periosteum, and not on that of the bone. The central portion of the callus, between the fractured extremities, becomes ossified last, and not until the new periosteum, as it appears, has formed from the cellular membrane of the circumjacent muscles. The new periosteum is at first thick and loose, but connected with the callus. The points of bone appear at first rather externally than in the middle of the gelatine.

It appears then that the ossification of the callus stands in close connexion with the formation of the periosteum, and that the development of the latter precedes that of the former. The result of observations, opposed to these, may be probably explained by the part which the old undestroyed periosteum may have had in the formation of the callus. The regenerated bone runs through the same stages as the original bone. The gelatinous substance at first becomes hardened. It appears a proper question, whether callus, prior to its conversion into bone, become cartilage or not?—*Meckel's Archiv.*

RUSSIAN MEDICAL SERVICE.

INVITATION TO ENGLISH SURGEONS.

Official Notification.

1. Foreign medical men, and especially those of Sclavonian extraction, are invited to enter the Russian service, either in the regiments of the army, in the military hospitals, or in the navy. During the 1st year they will be attached to some hospital in order to enable them to acquire the Russian language, so as to understand their patients, and be understood by them.

2. The candidates are required to produce certificates of good conduct, as well as satisfactory testimonials, from the Universities or schools where they have been educated.

3. The candidates will be divided into two classes, according to the degree of knowledge required. Those who have studied every branch of medical science, may be appointed to the superior functions of the medical departments of the land or naval forces, and will belong to the 1st class. They are to be examined in natural history, natural philosophy, chemistry, pharmacy, botany, anatomy, physiology, pathology and therapeutics, in materia medica, surgery,

midwifery, medical jurisprudence and medical police. They must, besides, know Latin. In the second class will be admitted those who, not possessing the necessary knowledge of practical surgery, may, nevertheless, be sufficiently acquainted with the other branches of medical science, and may also be promoted to superior ranks. Their examination is to be in chemistry, botany, anatomy, physiology, pharmacy, materia medica, pathology, therapeutics, the theory and practice of surgery, as well as medical jurisprudence and medical police. As to Latin, no more is required than what is necessary to understand the pharmacopœia, and to write prescriptions.

4. Foreigners who wish to be received into the Russian service as medical men, either in the land or naval services, are to proceed to St. Petersburgh, after having obtained passports, which on their application will be granted to them by the Russian embassies or consulates abroad.*

5. On their arrival at St. Petersburgh, they are to apply immediately to the medical department of the ministry of war, or to the physician in chief of the navy, who will take the necessary steps for the examination of the candidates, and appoint them to situations suited to the medical knowledge they shall be found to possess.

6. The examination shall be made by the Medico-Surgical Academy, in any of the European languages the candidate may choose; but those who intend to graduate in medicine, can only be examined in Latin, and, if they have not yet received a diploma, the above-mentioned Academy is authorised to grant them one, according to its existing regulations.

7. Such medical men whom the Academy will have deemed fit to be admitted into the 1st class, will receive an indemnification of 150 ducats† for their travelling expenses, and those of the 2nd class, will receive 100 ducats.‡ As to the individuals who shall have been judged inadmissible in either of these two classes, they will not be entitled to any indemnity, and will not be received into the service.

8. Medical men of the 1st class will be entitled to an annual salary of 1000 r^ubs.; § those of the 2d class of 800 r^ubs.; ‖ they will, moreover, as the other medical men of the land and naval services, be allowed their lodging and military servants.

9. Every medical man will be obliged to serve at least 12 years. He who, during the first 6 years, shall have performed the duties of his profession in an irreproachable manner, will receive for the remaining 6 years, an annual increase of salary of 100 r^ubs.

10. At the end of the 12 years, such medical men will be at liberty, either to remain in Russia, or to return to their own country.

11. Those who, during that time, shall have distinguished themselves by their zeal, will receive, on their quitting the service, a gratification equal to two years' salary, according to the rank they occupied last; or, should they prefer it, a pension equal to one half year's salary will be granted to them; which pension, however, can only be enjoyed on the condition of their continuing to reside in Russia.

12. If any of the medical men should die before having completed a service of 6 years, his wife and children will be entitled to receive the amount of one year's pay, together with that part due to the deceased for the Tierçal,* in which he died. If he has served from 6 to 12 years, his heirs will be entitled to a gratification of double his yearly salary, and in case of his dying between the 12th and 20th year of his service, a pension of half his yearly salary will be granted to his widow and daughters, till the time of their marriage or decease, and to his sons, till they are of age. Lastly, in case of his having served more than 20 years, his heirs will be entitled to a pension equal to the amount of his yearly salary, according to the rank of the deceased, at the time of his demise; but such pension shall cease the moment such heirs quit Russia.

13. The widows and children of medical men who have no claim to a pension, shall receive, if they wish to return to their own country, besides the above-mentioned gratification, 30 ducats for their travelling expenses. Those who can lay claim to the half pension, or to the whole one, shall be paid, besides the 30 ducats above mentioned, the former 2000, and the latter 3000 paper rubles.

14. On his entering the Russian service, every medical man will obtain a rank corresponding with the academic degree conferred on him. His ulterior advancement will depend on the general regulations concerning the medical service of the land and naval forces.

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* Russian Consulate in London, 29 Great Winchester-street, Old Broad-street, City. Hours of attendance from 12 to 3 o'clock.

† About £75 sterling.

‡ About £50 sterling.

§ About £43 15 0 sterling.

‖ About £35 sterling.

* A third part of a year, or 4 months.

ST. THOMAS'S HOSPITAL.

CASE OF TRAUMATIC TETANUS, WHICH PROVED FATAL IN TEN HOURS.—POST-MORTEM EXAMINATION.

I. Skelton, ætat. 9, was admitted into the Hospital on the 13th of March, under the care of Mr. Travers, in consequence of having received injury to both hands from the explosion of gunpowder. There was extensive laceration of muscular fibre, as well as integuments at the ball of each thumb; but as far as could be ascertained, there was no injury to the tendons or bone. The parts were brought as nearly in apposition as possible, and a portion of the muscle which protruded was cut away.

Every thing went on favourably;—the wounds suppurated, and were healthy in appearance, until Tuesday the 18th, when that on the right hand was observed to have a sloughy aspect. On the following morning, Wednesday, the boy complained of stiffness about the neck, and difficulty of deglutition, and was shortly after attacked with a convulsive fit. At noon, when seen by Mr. Travers, the symptoms of tetanus were all present in a marked degree; the pulse was very rapid, the countenance anxious, and the spasms truly horrible. The measures directed, were the exhibition of ten grains of calomel immediately, and an enema containing half an ounce of turpentine, alternating it every four hours with a tobacco injection, prepared by infusing fifteen grains in six ounces of water. One terebinthinate injection only was administered. In the evening about seven o'clock, when preparations were making to exhibit a second, the boy was attacked with convulsions, which, in a few minutes, terminated his existence. He died in about ten hours from the commencement of the tetanic symptoms.

In the post-mortem examination, the brain was found to be unusually vascular throughout; the cineritious matter was much darker than natural, especially on the right side. It was considered by Mr. Macmurdo, who carefully examined the body, that the brain, taken as a whole, was softer than usual, but that the parts contained in the right ventricle were preternaturally hard. There was effusion of serum between the arachnoid and pia mater of the brain, as also to a considerable extent between the membranes of the chord; the latter were highly vascular—to such an extent, indeed, that they had the appearance of having been artificially injected. The substance of the spinal marrow was healthy.

It is particularly worthy of notice, that the lungs were gorged with blood, but, apparently of an arterial character, these organs being of a bright red colour. The same appearance of the lungs, it was said at the time of examination, has usually been found in the dissection of fatal cases of hydrophobia—on this subject we cannot speak confidently.

GUY'S HOSPITAL.

CANCEROUS ULCERATION OF THE PENIS, ATTENDED WITH PROFUSE HÆMORRHAGE.

The following case was admitted under the care of Mr. Key on the 28th of February; it is interesting, as affording an instance of profuse hæmorrhage occurring in the ulcerative progress of a malignant disease, and the history of the case tends, in some measure, to confirm the opinion of Mr. Hey on this subject—that there is usually congenital phimosis, in patients affected with cancer of the penis.

The patient is a mechanic, 39 years of age, of sallow, or rather leaden complexion, and not of intemperate habits; he stated that five months ago a sore made its appearance on the upper part of the penis, and he attributed it to infection from venereal disease, having had a suspicious connexion about this time. Previously to the ulceration, however, he had had for several months a hardness or thickening, which he could feel through the integuments, and, from the description given, was apparently at the back part of the glans; there had been for some time also a slight purulent discharge from beneath the prepuce. He had never been able to effect the retraction of the prepuce, but to a very limited extent, but he now found greater difficulty.

The sore on the upper part of the penis gradually extended, and the patient placed himself under the care of a surgeon; who, as he affirms, made his mouth sore with mercury, under which the ulceration of the penis was checked. Subsequently the sore got worse, and after it had existed about two months it bled profusely on one occasion, and slightly afterwards.

There had been excessive bleeding on the morning of his admission into the Hospital, but it was checked at the time of his coming in. In the latter part of the day, having occasion to walk in order to fetch some clothes, the hæmorrhage was renewed by the exertion, and he came back to the Hospital, bleeding profusely. The dresser made use of a solution of alum, spirit of turpentine, and pressure for a considerable time, before the bleeding could be checked.

On the 1st of March, two days after admission, Mr. Key prescribed the nitro-muriatic acid lotion: he considered the disease, on a cursory examination, to be of a venereal kind, at least we presume so, from

his remarking to the pupils, that it would "by and by require a little mercury, for its cure." In the course of a few days, however, Mr. Key expressed his opinion of the disease being cancerous in its nature, and the following description was then taken down:—more than half of the penis is affected with ulceration, forming a misshapen fatty mass; having apparently left a portion of the glans and prepuce, the disease has extended along the body of the penis—the corpora cavernosa are exposed, and it was from them the blood proceeded, during hæmorrhage. The glands in each groin are much enlarged, and there is great induration along the whole course of each spermatic chord. The man experiences occasional lancinating pain in the parts, but his sufferings, according to his own account, are not very great. That portion of the penis which is not in a state of ulceration, is, even down to the pubes, literally as hard as a stone. The integuments are of a livid colour, and there are several minute openings through which a sanious fluid issues.

Hemlock poultices are used, and opium exhibited at bed-time, palliatives being the only means, it is considered, that can be adopted. Sir Astley Cooper has seen the man, and has expressed his opinion that the disease is too far gone to admit of relief by an operation.

ST. BARTHOLOMEW'S HOSPITAL.

FRACTURE OF THE BASIS OF THE SKULL.

A. B., a stout, middle-aged man, being in a state of drunkeness, had been thrown with considerable violence on the pavement, and received a severe blow on the head; he was taken up senseless, and immediately brought to the hospital. On his admission, there was complete loss of sensation and voluntary motion; his breathing was quick and laborious, pupils contracted and nearly motionless, pulse frequent and very feeble, and his extremities were cold. There was a bruise of the scalp over the right temporal muscle, and considerable bleeding had taken place from the right meatus auditorius externus. A few hours after his admission, he vomited, his pulse became full, hard, 90, and his extremities warm; breathing less laborious, and his pupils contracted freely when a candle was brought near them; at intervals he was very restless, and was with difficulty kept in bed. Sixteen ounces of blood were taken away; aperient medicine was given, and produced stools, and his head was shaved and kept cold with wet cloths. The following night he was very restless, and had but little sleep; during the day he was more quiet; put out his tongue when desired, but did not appear conscious of feeling when pinched. His breathing was natural; pupils active; pulse hard and full, 72. In the evening, his temporal artery was opened, and he lost 30 ounces of blood. Third day, he was so restless and unmanageable during the night, that it was necessary to put a strait waistcoat on him; he seemed more conscious of feeling; pulse 90. A blister was applied to the nape of the neck, and his bowels opened by some purgative medicine. Fourth day, he was more sensible, and answered questions when roused; pulse full, and rather hard, 110. He was ordered to take five grains of the hydrarg. c. creta, three times a day, and twenty leeches were applied to the temples. Fifth day, was less restless, drew away his arm when pinched, and complained of pain in his head; pulse feeble, 120. A blister was applied to the head. On the sixth day, his pulse was somewhat hard and full, he was bled to ten ounces; shortly afterwards there was increased stupor; his breathing became laborious, and his pulse more feeble and frequent; and in the evening he died.

Examination fourteen hours after death.

There was a fracture of the basis of the skull, extending through the right half and middle portion of the occipital bone, and the petrous portion of the right temporal, to the sella turcica. Beneath the fracture, and lying upon the dura mater, was found a considerable quantity of congealed blood; the coagulum being not less than half an inch in thickness, and seven or eight inches in circumference. The brain in the corresponding situation was quite flattened. A small quantity of fluid blood was effused over the right hemisphere of the cerebrum; the pia mater covering the left hemisphere, was very vascular, thickened, and some patches of blood were effused beneath it. The cribriform plate of the ethmoid bone was fractured, and at the extremities of the anterior lobes, blood was effused into the cerebral substance, and formed with it a brown pulpy mass; the brain for a few lines around it was of a dark yellow colour, soft, and when cut into, presented numerous bloody spots; the same appearances, though in a slighter degree, were observed at the extremities of the middle lobes. The membrana tympani of the right ear was ruptured.

On Monday last, Mr. Lawrence performed the operation of lithotomy, on a man, twenty three years of age. The patient had laboured under symptoms of calculus for many years, but had never suffered much pain. Blizard's knife was used, and a stone, the size of a large walnut, was extracted. Its surface was of a dark brown colour, rough, and hard, and composed of oxalate of lime. Six or seven ounces of blood were lost in the operation, but the hæmorrhage soon ceased.

ON DIABETES MELLITUS.

BY DR. ALEXANDER OF MANCHESTER.

To the Editor of THE LANCET.

Few disorders, to which "human flesh is heir," have more occupied the attention of the medical profession, elicited the ingenious hypotheses of its members, or afforded a more amusing discrepancy of opinion, than the complaint called diabetes. Believing that every mode of practice is justly termed "empirical," whilst the *proximate cause* of the disease, under treatment, is not clearly understood; and believing, further, that if the veil of obscurity, which envelops this in common with too many other complaints, is *ever* to be raised, and the opprobrious title of "incertæ" (conferred upon medicine by its reputed father) *ever* to become inapplicable: these *desiderata* must be effected by diligence, investigative as unceasing; reflective as accumulating: there in little apology necessary for calling the attention of your numerous readers to a subject which has lately been discussed (see LANCET, No. 234,) in the Westminster Society, with so little credit to itself, or benefit to its members. But without further preface, the opinion, advocated in Dr. Ayre's paper, read to that society, as well as in Dr. A's communication to THE LANCET (see No. 235,) appears to be, that in diabetes (to quote the author's words) "there exists an exaltation of the vital action of the secretory vessels of the kidneys, analogous to inflammation in other structures;" or to convey this unhappy definition in *fewer words*—that diabetes is *essentially* an inflammatory affection of the kidney. Were this opinion confined to the hall of the Westminster Society, it would have passed unnoticed by me; but such is not the fact. Therefore I proceed to make a few comments upon the case adduced by Dr. Ayre, as supporting this view of its pathology. In the first place, allow me to ask, were there *any symptoms*, in the example related by the author of the paper, to indicate the existence of visceral inflammation? None. Then why suppose this case of diabetes to depend upon, or be accompanied by, an inflamed condition of the kidney? Forsooth, because the operation of cupping was succeeded by an amelioration in the condition of the patient!! The concurrence of these two circumstances, it appears, having induced Dr. Ayre to believe, that the complaint is an inflammatory one; he proceeds to inculcate this opinion in spite of his own professional knowledge and powers of reflection; the former of which would have whispered him, that the kidney, when suffering under inflammation (chronic or acute), is not insensible; and the latter, that the cupping *might* have no reference whatever to the abatement of symptoms. From such hasty deductions as the above it was, that Dr. Gregory had so much reason for lamenting the existence of what he termed "false facts," in medicine. To assert that the kidney is inflamed in this disease is a ready and convenient mode of accounting for its inordinate secretion; but will the symptoms during life, or the appearances after death, support, for a moment, this opinion? I fear not; during the former we have *presumptive* evidence for the disbelief of such a doctrine, and after the latter, we have *positive* evidence to the contrary. It is somewhat singular, that Dr. Ayre, believing this affection to be "analogous to inflammation in other structures," should direct the patient's food to consist of the "*ordinary* proportions of animal and vegetable diet." Most practitioners, entertaining the views of Dr. Ayre, would certainly have diminished the quantity, if not dispensed altogether with the former kind of diet. But, probably, Dr. Ayre thought a combination of the Brunonian and antiphlogistic treatments would succeed better than either separately; the principle is not a bad one, being the one which caused our medical cane-carrying forefathers to believe that two heads are better than one, and that if one drug in their prescriptions failed, by employing a round half dozen, some other might succeed. But to return: we find another direction given to the patient, viz. "to abstain from all fermented liquors and acescent fruits," the effect of which abstinence, Dr. Ayre seems to attach *as little*, as I feel inclined to give *great*, importance to, believing that it had quite as much, not to say much more, effect in abating the symptoms, than the oft-repeated and highly-lauded operation of cupping. Of the complaint being a "*purely local*" one, as Dr. Ayre terms it, more anon.

Perhaps the most generally received, and most plausible explanation of this complaint, was, that diabetes is a local affection, arising from a *disordered action* in the kidney; in other words, that it is a *functional*, and not an *organic* disease of that organ. The principal argument which has been adduced in support of this view, is, that sugar, which forms so remarkable a constituent of the diabetic urine, cannot be detected in the blood. Now this, it is evident, if fairly inquired into, explains nothing, excepting the proof which it affords of the sugar being formed in the kidney. Before it could be considered as in any degree elucidating the pathology of the disease, it became necessary to show whence the *disposition* to the formation of saccharine matter arose, the kidney not sufficing: the blood was next

considered to be the source of the evil, and the explanation was attempted upon chemical principles, (forgetting that the laws which operate in the animal economy, have not a similar influence in the chemist's crucible, and *vice versa*.) It was supposed that there is in the blood flowing to the kidney, a deficiency of azote; partly from knowing that unazotised food increased the symptoms, and partly from knowing that sugar contained none. This explanation (or rather, attempt at explanation) was, at the time, thought one of the most happy illustrations of the applicability of chemical knowledge towards investigating the "abdita naturæ;" but this opinion gradually fell into discesteem amongst the *few*, although it is still, in some degree, credited by the *many*. 1st, From finding that diabetic patients fed *exclusively* upon food highly azotised, did not recover their health; and 2nd, from the chyle, which is the pabulum sanguinis, being found the *same*, whether a person be fed upon an animal or vegetable diet. But as it is always pleasanter and less invidious to descant upon the views which we ourselves entertain, than to point out and dwell upon the errors of others, (leaving it for those, who think themselves repaid for the trouble, to analyse and speculate upon the theories respecting this complaint, which Cullen, Heberden, and others have favoured the profession with,) I proceed, in as few words as possible, to give my own humble opinion respecting diabetes; which, whilst it is not entirely original or peculiar to myself, I have formed from repeated observations of the disease under consideration.

1st. I believe the complaint to be essentially a *constitutional*, and not a *local* one.

2nd. I look upon the mellitic urine as a mere effect of the general disorder; and,

3rd. Deem all local remedies, such as cupping, blistering, &c., in the same light that I should regard opium being applied to relieve cramp in the legs of a person suffering under cholera; or, in other words, as treating *effects*, and not the *causes* which produce them.

In support of my views, I need scarcely remind your readers that diabetes seldom, if *ever*, attacks those who are in the enjoyment of good health, which, supposing it to be simply a *local* affection, would be the case. Now if we recall to mind the examples of this disorder which have come within our own individual cognizance, or if we review with attention the cases of others, we shall find that the unfortunate diabetic sufferers were previously *aged*, *debilitated*, or *diseased*. Of those who have narrowly observed this disease during life, and noted its traces after death, I would inquire, is there any function that is not deranged in this complaint? Is there any part of the system that is not implicated? Is there any solid that is not discoloured; any circulating fluid that is not vitiated? In short, is the kidney, after death found to present a *more unnatural* appearance than what is observed in *every other part* of the frame? The answer to these queries must be in the negative; hence, I conclude, that the *whole system* is disordered, and the diabetes a mere *symptom* amongst others of its being so; hence, I conclude, that animal food diminishes the quantity of mellitic urine, *not* from its highly azotised nature, but from its being simply of the most nourishing description of aliments, and thus peculiarly adapted for the debilitated; hence, I conclude, that vegetable food aggravates the complaint, not from its wanting azote, or containing (as Dr. Ayre would have us to suppose) principles irritating to the kidney, but from its being a difficult article for the debilitated stomach to digest, and when digested, affording little nourishment. When any one will show me a person whose general health is good, and whose organisation is sound, the former not having been impaired by imprudence, or the latter by age, attacked with diabetes, *then* will I freely admit that the complaint may be an *independent cause*, and not an *accidental effect*; *then* will I regard it as placed with propriety in our nosologies as a disease. But, until then, I feel strongly inclined to regard debility (whether general, dependent upon organical disease, or attendant upon age) as the *remote*, a disordered state of the alimentary apparatus as the *exciting*, and a depraved condition of the whole body as the *proximate*, cause of that disorder, of which mellitic urine forms such a prominent and remarkable symptom.

I have the honour to remain,
Your obedient servant,
JOHN ALEXANDER, M. D.
Booth Street, Piccadilly,
Manchester.

PROSECUTION OF MR. COOKE OF EXETER.

To the Editor of THE LANCET.

SIR,—Since I had last the advantage of occupying some space in your valuable columns, certain other incidents connected with my late prosecution for the disinterment of a body at Exeter have occurred, which I am anxious to communicate to your readers. It was moved in the Court of King's Bench in January last, that all those additional costs which had fallen upon the prosecutors, by reason of my procuring the removal of the cause into the above Court, should be taxed upon me. This application was founded upon an old Act of Parliament,

which provides for those cases, in which a defendant, without any good reason, but for the sake, perhaps, of annoying his prosecutors only, procures a writ of certiorari, and thus increases the expense. As this had not been my motive, (which consisted in an entire distrust of the judicial impartiality, and indeed ability, of the magistrates, and in an apprehension of general prejudice,) I readily assented to the proposition of my counsel, that the order for payment of costs should be opposed. This gentleman, (Mr. Coleridge, to whom I wish I could express my concurrence in the general high opinion which is entertained of his legal knowledge, and of his clear and classical eloquence,) further grounded his opposition on an affidavit, made by a gentleman of Exeter, stating, that he had heard the nominal prosecutors; those poor friends, namely, of the deceased, in whose names the whole had been conducted, and who are considered the actual prosecutors in law, declare, that they had not instituted any proceedings at all, that they had expended nothing, but that, on the contrary, they had been paid for their time and trouble, and that they did not make the present application for costs. The fact is, that money had been raised by the personages of the vestry-meeting, who, with their proverbial generosity, had voted the necessary sums *out of the pockets of the parishioners!* The law required that the *actual prosecutors* should have suffered pecuniary loss, which, being denied by affidavit, of course no costs were awarded to *them*; and as to the illustrious holders of the parish helm, they are "rich fellows enough, and some that have had losses."

I have been informed that the money is now in process of collection from *all the parishioners*, and that they are so far from cordial in their obedience to the parish administration, that it has been necessary to make a show of that authority with which it is so *wisely* endowed. I cannot, Sir, describe the tardiness of this payment:

"The line must labour, and the words move slow."

Here, forgetfulness is pleaded: there is one declaring that *he hates oppression:* a third is willing that anatomy should be studied, having *lately* become convinced of its utility. A fourth, who never doubted this, is of opinion, that *occasional* disinterments of *poor people* ought to be connived at. There are a few who stoutly maintain the propriety of the late prosecution. They hold, that those who so much encourage disinterment in ever so indirect a way, connive at a *vile sacrilegious trespass*, not to say a *burglary*. Next, they contend, that as this is the case of *all* such persons, much more is the character of *the parishioners* at stake, who have *connected themselves with an affair of this kind by their representatives.* These logicians, Sir, are the original proposers of the action; men who stand accountable in the books of the attorney, and they are amazingly eloquent in preaching charity sermons for themselves.

I am sure that you, Sir, and every just (to say nothing of generous) individual, will be pleased to hear of the final defeat of that, which you have so truly characterised as a paltry persecution. I had almost said *second* defeat; because it is matter of common observation, that this *second attempt* (which one could pity, were it not so very ridiculous) arose out of the galling recollection, that I had been screened even from pecuniary punishment, by a high-minded effort of the free medical press, which had opened, as if by magic, the hands of a generous and zealous profession. The time when students of anatomy will not be exposed to these vexatious attacks, is, I hope, very fast approaching; and if, in the mean time, any should be subjected to them, I heartily wish them the support with which I have been honoured, and (what would not be half so gratifying, however,) more liberal, that is to say, better instructed prosecutors. With continued admiration,

I am, Sir,
Your most obedient servant,
WM. COOKE.

London, March 22nd, 1828.

UTERINE HÆMORRHAGE FROM IDIOSYNCRASY.

To the Editor of THE LANCET.

SIR,—In the last of Dr. Blundell's valuable lectures, (being that on After-Floodings) the following observations are made:—

"Some women there are, from idiosyncrasy, peculiarly liable to bleeding; and very undesirable patients they are; the probability being, that they will ultimately die under your hands. Hence it becomes a question in cases of after-floodings, whether we can use any means of prevention. Now, as I am in general called to cases in which the flooding has commenced before my arrival, I have had very little opportunity of seeing the effect of any preventive practice, and cannot, therefore, from my own experience, enlarge upon this topic."

Not long since I met with a case which, as it bears on the above remarks, may not be uninteresting. I engaged to attend a woman in her approaching labour, and, on questioning her, I found that she had been delivered of nine children; and that, immediately on the birth of each child, flooding came on to such an extent, that for upwards of twelve hours she remained in a state of

syncope, inducing extreme debility, from which she did not recover for many months. In the major part of her labours she was attended by one practitioner, who always remained with her twelve or fourteen hours after the delivery had been effected.

Under these circumstances, I desired her to send for me at the very commencement of her labour, which she did; and I immediately procured a quantity of ice, and immersed in it a jug of spring water. The labour proceeded naturally and rapidly; as soon as the child's head had cleared the vulva, and while the shoulders were yet undelivered, I gave my patient a tumbler full of the ice-cold liquid; the body of the child was quickly liberated; the placenta followed in about two minutes; the due contractions of the uterus were indicated by after-pains; a very moderate quantity of blood escaped; and my patient expressed much surprise and pleasure at her exemption from her usual tax. A very slight shivering was the only untoward symptom; but this I was prepared for, and did not attempt to relieve. It quickly passed, and within half an hour after the delivery I left the house, well pleased that I had apparently saved myself many hours of trouble and anxiety.

It may be necessary to state, that I endeavoured to ascertain whether, in the former labours, the placenta was quickly expelled, and whether there were any after-pains; but the woman's insensibility at the time precluded the possibility of her affording me any information on the subject, and it unfortunately happened, that a removal from the country to the metropolis obliged her to change her nurse.

I have the honour to be, Sir,
Your obedient humble servant,
J. G. Evans.

March 20, 1828.
St. Alban's Place.

ON MEDICAL CRITICISM.

To the Editor of The Lancet.

" 'Tis hard to say, if greater want of skill
Appear in writing, or in judging, ill;
But, of the two, less dang'rous is th' offence,
To tire our patience, than mislead our sense."

Among the professors of politics and medical literature, the pretensions to independence are so universal, that a stranger to the trickery of authorship, and the cant of literary hypocrisy, would naturally conclude that the opinions of the critic were quite under a bond, as secure as the solemn guarantee of a legal witness's oath, which enjoins him to speak "the whole truth, and nothing but the truth," under the penalty of his soul's perdition for his perjury. But the cant of *ex parte* criticism, and the mercenary character of our periodical press, have become proverbial. It is a stigma on about nine-tenths of our literary indicators, that the self eulogy of laborious independence is on their lips, while the serpent envy coils around their hearts. Their comments are argumenta ad hominem; and (still to speak metaphorically) as the really brilliant lights of science, or the paltry gods of their own idolatry, may be the subjects of their criticism, so do they dip their pens into the gall of invidious satire, or the sympathetic ink of servile flattery, easily deciphered, however, by the penetrating glance of real and candid impartiality. I confess, Sir, that such is the distrust and suspicion which I have long entertained for most of our critical analyses, that I regard them in the same light as I do the fulsome eulogiums of the ignorant parent, dazzled with some very slight good quality in her child, and blind to its thousand defects and deformities.

These critics are, indeed, little better than the sectarian bigot; for while the one will warp and mutilate the holy records to suit his own selfish views, (for even "the devil can cite scripture to his purpose,") adducing only those texts which seem to throw light on his own dogmas, so will the other, in servile obedience to the literary despot who rules him with a rod of iron, trumpet forth the virtues and abilities of all those satellites who revolve round this great *Jupiter Bibliopola*, however impeachable may be the one, or shallow and erroneous the other. Such reviewers

" Judge of author's names, not works, and then
Nor praise, nor blame the writings, but the men."

All who have reflected on this subject, will feel and acknowledge that this imputation may be justly cast on the great majority of reviewers in general literature. It would lead me, however, into digression, were I to take so comprehensive a view of the subject. My remarks shall peculiarly apply to the literature of our own profession; that profession which is capable, *pro aliis*, of conferring incalculable benefits on mankind, if liberally cultivated, and *judiciously defended*, but which must of necessity fail of attaining its full grade of perfection, while that Augæan stable, from which the streams of its degradation have so long flowed, shall remain uncleansed. But, leaving this Herculean task to wiser heads and more powerful sinews, I venture to offer a few brief remarks on a subject of no less importance to the march of medical intellect—*the duties of medical criticism.*

With regard to the *qualifications* of a reviewer, I may assert the utter *nullness* of one who possesses not *independence*, *discrimination*, *extensive reading*, and *leisure*; in addition to which, I may mention well-directed *satire*, so often influential in exposing presumptuous ignorance, and effecting important revolutions, when mere force and serious severity have failed.

. . . . . " Ridiculum acri
Fortius et melius magnas plerumque secat res!"

To the first and last of these qualities (as I am not writing an essay) it is my purpose to allude, for I will not suppose a publisher so blind to his own interest, as to select an editor who does not possess a moderate share of discrimination and of literary research.

It is clear, then, that the fact of a medical bookseller being the publisher of an analytical review, must sap the very foundation of independent criticism. Let me ask, Sir, how far removed from absolute idiocy, would be that manufacturer who should expose his commodity for sale in his warehouse or his window, and should notify on his placard, that such commodity was totally inapplicable to the purposes for which he had made and sold it. And does not the situation of a publisher, especially one who embarks a considerable sum in the purchase of a copy-right, bear a strict analogy to this manufacturer. We should deem that man a fit subject for the coercion of Warburton or of Haslam, who did not give, at least, a gentle hint to his editor, not to attack the reputation, the judgment, and the very existence of his employer with his pen; this would, indeed, be

Suo sibi gladio hunc jugulare.

Sir, candour here would be a paradox, and would soon drag its possessor along the high road to ruin. The fault, it were not too much to call it the crime, lies, like the *College Charter*, in the principle itself; and I am bold to declare, that it were vain to expect anything like liberality of criticism, while the publisher is his own reviewer. I wish not to add my feeble effort to the breaking of a bruised reed, (for I write in pity,) but truth bids me declare, that this outrage on literary delicacy, and on common justice, is peculiarly exemplified in a Journal, published within 100 miles of Fleet Street. It is evident how little faith we ought to place in the censure or the praise of such a Journalist. But there is another material deficiency, no less destructive to the welfare of medical science—*the want of leisure*. It is the duty of a critic, Sir, to read carefully and candidly each publication which he reviews; not to throw on it a superficial glance, and comment, perhaps, on one only link in the author's chain of reasoning. The injustice of such a mode is self-evident: but it is indeed the natural consequence of entrusting the duties of criticism to those who enter on them, fatigued, perhaps, with the labour of an extensive practice, in which state of exhaustion they retire to their study with any thing but a

Mens sana in corpore sano.

This is perhaps the least evil: there is a greater still than this—the custom of reviewing by deputy: of consigning that sacred duty to one, who, perhaps, knows as little of the subject he is called on to analyse, as he does of the longitude, or (what is still more ridiculous) to another, who may be the very author of a rival publication. It is confessedly the interest of such a man to decry, in the harshest terms, the pages of his opponent; and rather than "*write himself down an ass*," he will do so, in terms of the most unreasonable censure, and often of unqualified abuse; and with the *green-eyed monster* at his elbow, sullying with his jaundiced guilt the literary reputation of his rival. Nothing, surely, can be more absurd or unjust, than this system of reviewing by deputy. It is wonderful that a critic should run the hazard of compromising his professional and literary character by such a dereliction of duty. I could enumerate many instances of the bad effects of this *mode of reviewing* (for my observations are grounded on facts): but I will merely allude, for the present, to a certain libellous letter, on the character of the male accoucheur, published a year or two ago, which would form an admirable preface to "the paralytic feeling of Carlisle;" a farrago of the most absurd reasoning and mock modesty, which has ever disgraced the pages of science: and I confidently believe that that (to say the least) injudicious letter, has proved one great source of the downfal of the Journal in which it appeared.

I could expatiate, Sir, much longer on this subject, so important to the interests of professional literature, but I must forbear, and shall merely express my ardent hope, that your own example may emancipate the present batch of critical slaves, and establish for us a principle of liberal and independent criticism.

I am, Sir,
Your obedient servant,
A.

March 10, 1828.

WESTMINSTER HOSPITAL.

To the Editor of THE LANCET.

SIR,—On referring to the letter of Westmonachus in the last number of your valuable Journal, "on the advantages of the Westminster hospital," after admitting the benefit to be derived by appealing to public opinion, in matters of dispute between pupils and their instructors; your correspondent proceeds to inform your readers of the many and great opportunities afforded to the pupils of this hospital, in the pursuit of surgical knowledge. Not contented with stating the truth, he has permitted his spleen (to use a phrase of his own) to get the better of his judgment, in affirming that the pupils are at liberty to enter the wards at all times, question any patient they may select, or take notice of any case.

Now, Sir, this is an erroneous statement, and Westmonachus must, or ought to have known it, before he made the assertion. The pupils are allowed to visit the patients daily, from ten till twelve, A. M., but are not permitted to enter the Wards, unless accompanied by a physician or surgeon; and it is in direct violation of the rules of the Hospital for them to remain after the medical officers have left. Post-mortem examinations are very seldom performed; and when performed, they are so badly conducted, as to afford little or no information to the pupils, neither are they publicly announced. I think I may assert, without fear of contradiction, that the surgeons are highly reprehensible in neglecting the performance of this duty,—a duty which they owe, not only to the pupils, but to the public at large. To the industrious student in pursuit of pathological knowledge, a knowledge indispensably necessary for the surgeon, as well as the physician, who wishes to treat diseases upon scientific principles, Westmonachus's one word, "CIRCUMSPICE," will not suffice; but perhaps this gentleman is one of the many who depreciate all pathological researches, considering it sacrilegious to lay hands on the dead.

In justice to Mr. Lynn, junior, I must state, that I have never known him otherwise than punctual in his attendance, and at all times ready to impart information to the pupils; but this is more than can be said of the other surgeons, and every industrious student of this hospital, must have frequently suffered both from this irregularity and non-attendance. I am not one of those who would cavil at trifles; but when a surgeon possesses neither mental nor corporeal endowments, sufficient to entitle him to retain office, or when he, from his extensive private practice, neglects his duties to his pupils, day after day, it is high time that he should resign his appointment in favour of a more efficient and attentive person; or, if he is unwilling to do this, he must expect to be held up to public notice.

I remain, Sir,

Your obedient servant,

PHILALETHES.

March 24th, 1828.

COMPLAINTS OF A PUPIL AGAINST MR. HEADINGTON.

To the Editor of THE LANCET.

SIR,—I take the liberty of addressing you, as one who feels interested in behalf of the pupils of the different hospitals, and, on every occasion, is ready to stand forth their advocate, in redressing old grievances. You are, perhaps, aware,* that the chief inducements which pupils have of attending the London Hospital, are the very excellent lectures delivered by Mr. Headington, and the privilege of becoming dressers after a short time. Mr. Headington, for what reason I do not know, has thought proper to resign his charge and duty to Mr. Luke, in great measure, and only lectures once or twice a week. The latter gentleman also *reads* his surgical lectures, and gives part of the demonstrations. The students would not object to Mr. Luke's lecturing, did that gentleman possess the necessary qualities for a good lecturer, which, forsooth, he does not. The consequence is, that the majority of the pupils do not attend the surgical lectures, as they can hear so little to their profit. The number of those who attend the surgical lectures, seldom exceeds twelve or fourteen, many of whom can scarcely keep up their attention. If you can think of any remedy for bringing Mr. Headington to his duty, you would greatly oblige the students, and confer a favour on them, which they will not forget.

I remain, Sir,

Yours, &c.

LONDINENSIS.

March 13, 1828.

P. S.—I have stated above, that Mr. Headington had lectured twice a week. I must correct this error, as he has only given one anatomical lecture for nearly three weeks.

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* Indeed we are not.—ED.

THE LANCET.

London, Saturday, March 29, 1828.

In the following brief abstract of the Parliamentary proceedings of Monday last, the medical profession will observe, with much satisfaction, that the difficulties which are opposed to the cultivation of the science of anatomy were brought under the consideration of the House of Commons. The presentation of a petition on the subject, signed by upwards of SIXTY of the surgeons and physicians of Birmingham, gave rise to a short, animated discussion, characterised throughout by important features, and which terminated with a notice of motion for Thursday, by Mr. WARBURTON, for that Committee of Inquiry, which was petitioned for by the Members of the College, at their General Meeting, held on the 18th of February, 1826. As a preliminary step to this motion, Mr. Warburton, in the last session of Parliament, moved for certain "Returns," since laid before the House by the College, and a copy of which the reader will find at page 954. We regret that the publication of the INDEX to the present volume renders it impossible for us to give any account of the proceedings of Thursday in this Number; we may venture to predict, however, that the Committee will be appointed without opposition.

House of Commons, Monday, March 24.

Mr. DUGDALE presented the following Petition from the Physicians and Surgeons of Birmingham, complaining of the inconvenience experienced by numbers of their profession from the want of bodies for dissection, and calling upon the House to remove the impediments which were at present thrown in the way of the cultivation of anatomical science.

"*To the Right Honourable the Commons, &c.*

WE, the undersigned physicians and surgeons of the town of Birmingham, respectfully implore the attention of your right honourable House to the urgent necessity of adopting some measures to remove the impediments to the cultivation of the science of Anatomy.

Unfortunately deprived of legislative authority, exhumation is, at present, the only method by which bodies can be procured for anatomical purposes, a method painful to the feelings of the public, and opposed by the laws of this realm.

In various parts of the continent of Europe the prosecution of the science of Anatomy is protected by their respective governments, and every facility afforded for its liberal and extended cultivation; hence, the youth of Great Britain, designed for the medical profession, are compelled to proceed to foreign countries in pursuit of that information which is denied to them here.

As the practical surgeon is formed only by the laborious study of Anatomy and actual Dissection, your petitioners presume not to dwell upon the advantages to be derived by the public service and society at large, by attention to their prayer.

Your petitioners most earnestly solicit your right honourable House to take this important subject into its serious consideration, and adopt such measures as in its wisdom may be deemed fit.

And your petitioners will ever pray."

Sir R. FERGUSSON thought that few, if any, such petitions had ever before been presented to that House; but he could not help thinking that the subject now called to their attention, perhaps for the first time, deserved the most serious consideration of the House. It was a matter of the most vital importance, and the difficulty of procuring subjects was at present so great, that he feared, if it were suffered to continue, the teaching of anatomy must stop, and the schools would be deserted for the want of means to offer instruction to the pupils.

Sir J. YORKE said, he had presented some petitions of this kind in the course of last year, and he was glad that the attention of the House was now recalled to the subject. He wished for a declaratory law, the object of which should be, to let the public know that any one *in articulo mortis* was at liberty to sell his body for anatomical purposes, and to allow executors, administrators, and assigns, to give over the bodies of such persons to the purchasers. He was certain that if such a law was passed, there would be bodies in abundance; for there were few paupers who would not be glad to leave ten guineas to their widows; and the practice, thus introduced, would have this particular advantage about it, that those who went out of the world with any particular disease would be known to the medical profession, who would purchase their bodies, and thus be better enabled to ascertain the nature of that disease, and its effects upon the human frame,

than they could possibly hope to do when, as at present, they were generally supplied with healthy subjects, that were only good for the purpose of teaching the younger pupils the common processes of dissection. He thought the House should state the law to be what he had mentioned; for now he believed it was generally considered that such a disposition of the body by the executor, although under the directions which the testator had given, was not authorised by law.

Mr. WARBURTON said, that in a short time he should move for a Committee to inquire into the subject which the petition had brought under the notice of the House. He had determined on doing so, in consequence of the particular request of some of the first surgeons in the metropolis. In a subsequent part of the evening, the Hon. Member fixed his notice of motion on this subject for Thursday next.

Mr. P. THOMPSON thought, that among the alterations of the criminal law, the House might introduce one which would materially assist in destroying the prejudice now commonly entertained against anatomical dissection. One of the concomitants of the severest penalty of the law was, in some cases, the handing over the body of the malefactor for dissection, and that circumstance tended to create a strong feeling of prejudice, which would probably cease to exist when that part of the law was altered. There was no such feeling in France, where bodies might be procured at ten francs each; in consequence of which there was no want of subjects for the schools, and the science of anatomy was taught under much greater advantages than in this country.

The petition was brought up, read, and ordered to be printed.

Ecce iterùm Crispinus! We have not yet done with Mr. GUTHRIE; although, if the character of that individual, in so far as it is connected with his legal proceedings against THE LANCET, were the only point on which an examination of Dr. Forbes's statement was calculated to throw light, we should deem it necessary to apologise to our readers for recurring to a subject, in which the profession and the public could take so little interest. But the conduct and character of Mr. GUTHRIE are not the only points involved in this inquiry. The transactions disclosed in the extraordinary correspondence published by Dr. Forbes, are not transactions of a private nature. That correspondence brings to light, indeed, a secret history; but it is a secret history to which it is of the last importance, both with reference to the interests of the medical profession, and to the pure administration of justice, that the utmost publicity should be given. That correspondence strips the mask from affected purity; removes the veil from spurious pretensions, and opens to our view the moral machinery, which, under cover of an apparently honourable object, was, in reality, directed against a Journal, which had long been felt as a thorn in the side of the corruptionists, and whose fearless exposure of abuses was the true *gist* of Mr. GUTHRIE's action. That correspondence lays bare to our admiration a member of the profession, who, while he was ostensibly seeking reparation for an alleged injury done to his professional reputation, and ostensibly courting the fullest inquiry into the unimpeachable character of his professional practice, was, at the same time, conscious that the testimony of his own colleague, with respect to his practice, if fairly elicited, would be unfavourable to him; who confesses, indeed, aye, distinctly confesses, that he did not expect favourable testimony from his own colleague, and whose sole hope of obtaining a verdict against THE LANCET must have been founded, therefore, on the expectation that he should succeed in suppressing evidence, which, if fairly and honestly given, could not but be fatal to the cause of action. We beg the attention of our readers to the passage in which this extraordinary confession is made; premising that "the purpose" to which Mr. GUTHRIE alludes is, that of sounding his colleague, Dr. FORBES, as to the nature of the evidence he would give upon the trial. "After a few minutes' conversation, direct to the purpose, I left him with the conviction, that, WHATEVER QUESTIONS MIGHT BE PUT TO HIM, he would say nothing detri-

mental to me—favourable I did not expect." *Correspondence*; *Mr. Guthrie to Mr. Samuel Beasley*, No. 8. Favourable testimony the "modest author" did not expect; for Dr. FORBES had months ago enabled him fully to understand the estimation in which he held his abilities as an ophthalmic surgeon; Dr. FORBES had months ago declared to him, that, in his opinion, "stimulating applications to the eyes of the patients were too *indiscriminately* used, and that constitutional treatment was, in many cases, not sufficiently attended to." But though Mr. Guthrie did not expect favourable testimony, he went away with the conviction that Dr. FORBES, WHATEVER QUESTIONS MIGHT BE PUT TO HIM, would say nothing detrimental to him; in other words, he went away with the conviction that Dr. Forbes would violate the oath he must have taken to tell the whole *truth*, and to suppress no part of it; and that, though panegyric was not to be expected, he would, nevertheless, suppress those unfavourable opinions, which could not but be fatal to the object of Mr. Guthrie, namely, a verdict *per fas et nefas* against THE LANCET. O, unexampled modesty! O, honourable, rational conviction! Mr. GUTHRIE did not—bashful creature!—expect that Dr. FORBES would be lavish in his praise, but he went away with the conviction that he would suppress his unfavourable opinions; and this too, let it be well observed, *à tout épreuve*, in spite of all questions which might be put to him, and notwithstanding all attempts which might be made on the part of Counsel or Judge to elicit the truth. No matter whether the question put to Dr. FORBES were to ascertain whether stimulating applications were, or were not, *indiscriminately* applied to the eyes of the patients—no matter whether the question put to Dr. FORBES were to enable the Jury to determine, whether constitutional treatment was, or was not, sufficiently attended to—"WHATEVER QUESTIONS MIGHT BE PUT TO DR. FORBES," Mr. GUTHRIE, although perfectly conscious of his colleague's unfavourable opinions, went away with the conviction that he would either evade them altogether, or so shape his answers to them, that nothing adverse to his professional interests, or to his desire of obtaining an unjust verdict against this Journal, might transpire.

We believe that the internal mechanism of a suit at law, in which, to use a familiar expression, the plaintiff had not a leg to stand upon, was never so completely exposed, as it has been by the publication of the correspondence between Mr. GUTHRIE and Dr. FORBES. Here is a plaintiff, who has not, and who feels that he has not, the slightest chance of obtaining a verdict against the party, whom he accuses of misrepresentation, unless he can succeed in suppressing or qualifying the testimony of the witness, most capable of speaking to the matter in issue, and who, if he were called into the witness-box, and respected his oath, must prove that there was no just ground of action. We find this plaintiff sounding the witness, whose testimony he had most reason to apprehend, with a view of ascertaining how far he might calculate on his forbearance—we find this plaintiff holding out to the witness, by way of inducement to forbearance, that he (the plaintiff) would "pay him a compliment in the course of the trial." (Dr. Forbes's statement, *Lancet*, p. 837.) We find this plaintiff, though fully acquainted with his colleague's unfavourable opinions, nevertheless, leaving him with the conviction that his testimony, WHATEVER QUESTIONS MIGHT BE PUT TO HIM, would not affect the success of his action—and, finally, we find this plaintiff abandoning the action at the twelfth hour, when he found that no consideration could induce that witness to tamper with his oath, or, when called upon, in the witness-box, to declare his opinion of the plaintiff's skill as an opthalmic surgeon, to SUPPRESS THE TRUTH.

How far the TRUTH was unfavourable to

Mr. GUTHRIE, and in what degree it was incompatible with his object of obtaining a verdict against The LANCET, the "modest author" shall himself determine. Strongly as we should feel inclined to scrutinise Mr. GUTHRIE's testimony, before we pinned our faith upon it, on almost any other occasion, we wish for no better testimony on this point than his own. The circumstance which finally determined Mr. GUTHRIE to make his retreat from the Common Pleas, was the receipt of a letter from Dr. FORBES, in which that gentleman undeceived him as to the "CONVICTION" on which he had hitherto honourably calculated; reminding him that he could not but be aware of his opinion, "that stimulating applications to the eyes of the patients were too indiscriminately used, and that constitutional treatment was, in many cases, not sufficiently attended to;" and further apprising him that "if questions were put to him concerning the practice, he should feel himself compelled to state as above." This letter Mr. GUTHRIE himself characterises as "expressive of Dr. FORBES's determination to give that, which he took to be the strongest possible evidence against him." (*Correspondence: Mr. Guthrie to Mr. Beasley No.* 8.) Again Mr. GUTHRIE himself observes: "to say *that stimulating applications were too* indiscriminately used, and that *constitutional treatment was, in many instances, not sufficiently attended to*, was expressing an opinion as to my want of judgment, which could not have failed to make a strong impression in every quarter, and which appeared to be highly detrimental to me, as coming from my colleague, the physician to the Infirmary, and BEING, IN FACT, IN DIRECT SUPPORT OF THE MATTER OF THE LIBEL." (*Correspondence, No.* 11: *Mr. Guthrie to Mr. Beasley*).

This last admission of Mr. GUTHRIE relieved us altogether from the necessity of making any observation on the mode and form in which our correspondent ACIES, on whose letter Mr. GUTHRIE declared in his action, expressed his opinion of Mr. GUTHRIE's ophthalmic practice. Laying aside the jokes of ACIES on the provincial accent and grammatical inaccuracies of Mr. GUTHRIE, which the 'modest author' never intended, we presume, to make a part of the *corpus delicti*, the passage in which the writer said "he was inclined to suspect that Mr. GUTHRIE would put out many eyes, till he learned to subdue inflammatory action by other means than the employment of stimulating washes, or oxymuriate drops"—the strongest passage in the alleged libel—was, in substance, as Mr. GUTHRIE himself admits, no more than a repetition of the opinion repeatedly declared by Dr. FORBES, his own colleague.

Whatever doubts Mr. GUTHRIE might entertain, or affect to entertain, as to the adverse nature of Dr. FORBES's opinions before the receipt of the letter to which we have just alluded, that letter must, at any rate, have effectually removed them, since we find him expressly stating that the letter indicated Dr. Forbes's determination to give evidence "in unequivocal support of the matter of the libel." After the receipt of the letter, therefore, it is evident that Mr. GUTHRIE knew he had no more cause of action against THE LANCET than he had against his own colleague, Dr. Forbes. Yet with this new conviction, assuming it to be a *new* conviction, for the sake of the supposition most favourable to the "modest author,"—with this new conviction forced upon his mind, in this state of perfect consciousness as to the identity of the sentiments of his own colleague with those of the writer of the alleged "libel," Mr. GUTHRIE still seems to have clung to the hope of inducing his colleague to suppress his unfavourable sentiments. "On going into Court," says Mr. GUTHRIE, "I met and asked Dr. FORBES whether he was determined to abide by his letter to me of the preceding evening. He replied, he was; to which I said, it would put an end to the

proceedings, and I left him." Here again we have a precious specimen of the morality of the *Pure*. Mr. GUTHRIE has the modesty to ask Dr. FORBES whether he was determined, when called into the witness-box, to give such testimony as he was bound, if he had any regard for his honour or his oath, to give; and when this question is answered in the only way a man of honour could answer it, Mr. GUTHRIE then, and not till then, declares that it would put an end to the proceedings, and expresses his virtuous indignation at the conduct of his colleague.

The conflicting feelings of vexation at the failure of his attempt to suppress the testimony of Dr. FORBES, and of self-gratulation at the sagacity which enabled him, by a timely retreat, to prevent his own exposure, and extricate himself from a false position, are ludicrously expressed by Mr. GUTHRIE in the following passage :—

"To have gone into Court to have myself abused, I should not have minded, provided a complete and triumphant proof of the falsehoods and insinuations stated had followed, certified by a verdict giving heavy damages; but to subject myself to that abuse, and then to have my colleague called as a witness, and to have him give evidence in unequivocal support of the matter of the libel, could only have obtained for me the appellation of a blockhead: I had more sense than to do it.

Mr. GUTHRIE, it seems, would have gone into Court, and would have put up with a little abuse—patient individual!—provided he could have succeeded, by suppressing Dr. FORBES's testimony, and by making that appear to be false, which his colleague has proved to be TRUE, in obtaining a verdict, with heavy damages, against THE LANCET! There is a simplicity in this avowal of the "modest author," which is truly primitive and Arcadian. The passage breathes of primeval purity. It surpasses every thing we ever remember to have met with, in the way of candour and bashful ingenuousness. Verily we marvel at the manner of the man, from whom such a declaration could have proceeded. He deserves to have fallen upon better times, and to have flourished in an age untinctured with brass, amidst his own congenial virtues.

. . . . . "Verumque, fidesque,
Nudaque simplicitas, ingenuusque decor;"

These are the qualities which move our wonder in every line of the passage which we have just quoted from the "modest author." The writer stands forth in naked, but blushing, simplicity, extorting, while he shrinks from, our approbation!

We have now arrived at the close of the transactions connected with Mr. GUTHRIE's action against THE LANCET, and we beg the further attention of our readers, while we sum up briefly the leading facts developed in Dr. Forbes's extraordinary statement. We have shown that the statements in THE LANCET, both with respect to the late attendance of Mr. GUTHRIE, complained of by the patients, and with respect to the want of an efficient house-surgeon in his absence, which were characterised by Mr. Guthrie as *infamous and malignant falsehoods*, were declared by his colleague Dr. FORBES to be TRUE.

We have shown that Mr. GUTHRIE attempted to answer the first of these statements, by altering the hours of attendance, ante-dating the period at which the alteration was made, and then declaring the statement, which applied to the regulation, that existed previously to the alteration, to be *an infamous and malignant falsehood*.

We have shown that Mr. GUTHRIE attempted to answer the second of these statements, by affirming that Mr. Tebbs had held the office of house-surgeon for a period of two years; while, in the teeth of this affirmation, Mr. GUTHRIE's colleague, Dr. FORBES, has proved, that Mr. Tebbs was, for the first time, raised to the rank of house-surgeon on the very day on which Mr. Guthrie asserted, that he had held the office for two years.

We have shown that Mr. GUTHRIE further attempted to answer the second of

these statements, by affirming that "Mr. Tebbs was better able to treat diseases of the eye, than nine-tenths of the surgeons of London," while, in the teeth of this affirmation, Dr. Forbes has declared, that Mr. Tebbs had been *once*, if not *twice*, rejected by the College, and that Mr. Guthrie himself confessed, on the day previous to the expected trial, that Mr. Tebbs was *ignorant of anatomy*!

All these facts we have demonstrated in our two former articles, abstaining, for the most part, from comment, and contenting ourselves either with placing the statements of Mr. Guthrie in juxta-position with the conflicting statements of Dr. Forbes, or with opposing what Mr. Guthrie has written or declared at one time, with that which Mr. Guthrie has written or declared at another. The other incidents in this singular history we have traced, step by step, in our present article. With respect to the alleged libel in the letter of our correspondent Aciès, we have shown, from Mr. Guthrie's own admissions, that the substance of that letter contains nothing more disparaging to Mr. Guthrie's professional skill, than that which his own colleague was prepared to prove in evidence against him; we have shown, from his own admissions, that he had, in point of fact, no more cause of action against The Lancet, than he had against his own colleague Dr. Forbes. As to the mode and form in which Aciès communicated his opinions, we are ready to admit that, in point of taste and tenderness to a "modest author," he might have abstained from scoffing at Mr. Guthrie's provincial pronunciation, and grammatical inaccuracies. But, admitting that Aciès is, to this extent, a licentious writer, let it be remembered that the charge of licentiousness applies only to his raillery on peculiarities in the discharge of a public duty wholly unconnected with Mr. Guthrie's private character, and not to his remarks on the mischievous tendency of Mr. Guthrie's ophthalmic practice, which are substantially the same, according to Mr. Guthrie's own admission, as those of his colleague Dr. Forbes. Even Mr. Guthrie had the wisdom not to go into Court to seek damages for the affront offered to his pronunciation, and his bad English, when Dr. Forbes's determination to speak the truth left him no hope of sustaining the *gravamen* of his charge. And if hereafter another, and a more unfriendly Aciès should arise, who may chance to speak slightingly, or even licentiously, of his ophthalmic practice, as well as of his authorship, we recommend to Mr. Guthrie's perusal and study the following passage in a celebrated speech of Lord Chesterfield:

"Every good in this life has its allay of liberty. Licentiousness is the allay of liberty. It is an ebullition, an excrescence; it is a speck upon the eye of the political body, which I can never touch but with a gentle, with a trembling, hand, lest I injure the eye upon which it is apt to appear."

Mr. Guthrie, we are aware, laughs at the notion of the eye being a delicate organ, and will despise the illustration, as well as the sentiment of Lord Chesterfield. But Mr. Guthrie's contempt for the press is an affliction which the press can well afford to bear. It was well observed, indeed, by an eminent individual, on the day appointed for the trial, that, however formidable Mr. Guthrie might be as an operator on the human eye, as an enemy to free discussion he was little to be dreaded; and that, whatever effect his plans of treatment might have in extinguishing the eyes of his patients, he would find himself completely baffled and defeated in his attempt to *put out the eyes of* The Press.

The Number of the Edinburgh Review, just published, contains an article on Dietetics, which is chiefly dedicated to a review of Dr. Paris's recent publication. Among the books classed together at the head of

the article, is a treatise on the Morbid Sensibility of the Stomach, by the Editor of the late Quarterly Medical Journal. In general, Reviewers think it necessary to read at least the title of a book; but, in the present instance, even this mark of attention seems to have been dispensed with, for the author of the treatise in question is styled Dr. JOHNSTONE. The Reviewer, however, may have his reasons for thus spelling the name of his countryman, for we understand that JOHNSTONE is really the name of the late Quarterly Journalist, and that he has divested himself of the T, in order that he may have the gratification of alluding, in his speeches at the Medico-Chirurgical, and other societies, to his illustrious *namesake*, the author of the Rambler. This ridiculous, but harmless piece of vanity, brings to our recollection an anecdote which we once heard from a Jamaica planter. In the West India Colonies, the planters are in the habit of giving the names of distinguished Europeans to their slaves, so that it is no uncommon occurrence to find William Shakspeare, John Locke, Oliver Cromwell, and other great personages, all working together in the same plantation. Our Jamaica planter had distinguished one of his slaves by the name of William Pitt. This man had acquired a little learning beyond his condition; he could read, and even write, after a certain fashion, and was, in other respects, an excellent slave, until his brain was turned by the doctrines, political and religious, instilled into it by a fanatic of the school of Wilberforce, who had, moreover, accelerated the catastrophe by plying the poor creature with newspapers, containing the parliamentary debates on the slave-trade. The first indication which William Pitt gave of his insanity was, a refusal to clean his master's shoes. The planter was astonished at this apparent contumacy in a slave whose general conduct was so exemplary. Under ordinary circumstances the whip would have been resorted to; but it soon became apparent that this was a case requiring a different species of coersion, when, upon being reprimanded for his disobedience, William Pitt assumed an erect attitude, declaring, that, in the whole course of his parliamentary experience, he had never heard of a prime minister who cleaned shoes, and that, for his part, he was determined to tread in the footsteps of his right honourable predecessor, the Chancellor of the Exchequer!

WE have inserted, at the request of the Russian Consul General, an invitation to English Surgeons to enter the Russian Naval and Military Service. The document will found at page 935. After having given it an attentive perusal, the *advantages* offered, will not, we should think, induce English students to VOLUNTEER.

Surgical Observations on the Treatment of Chronic Inflammation in various Structures, particularly as exemplified in the Diseases of the Joints. By JOHN SCOTT, Esq., Surgeon to the London Ophthalmic Infirmary, &c. pp. 291. 8vo. 1829. Longman.

[*Continued from* p. 919.]

THE object of this work, as announced with singular modesty in the Preface, is said to be, to communicate that mode of treatment which the author's father "has for many years employed in diseases of the joints, with complete success, in a *vast* number of cases, in which the methods ordinarily employed have proved ineffectual." Further on, the author assures us, that his father, by a "dexterous application" of remedies, has succeeded in curing "many local diseases which had baffled all previous efforts." Thus much by way of prefatory laudation of the father. The author himself, too, has verified the efficacy of the treatment in "numerous cases;" and he designs his book "as a guide to the

young surgeon." It would seem that there is a sort of hereditary virtue in this family for treating diseases:—"It is with good reason," says Sancho Panza to the Squire with the great nose, "that I pretend to have a judgment in wine—this is a quality hereditary in our family." But, let us apply the test to all this *bounce*—let us see what the wonder-working means are, which, in the hands of Messrs. Scott, cure diseases that "baffle" all other surgeons, and which are declared to be "too important to be confined to an individual;" they are—guess reader if thou can'st—*mechanical support*, and the *local application of mercury*.

Previously to considering diseases of the joints, the author enters into an inquiry on the nature and treatment of chronic inflammation and ulceration in general. "Inflammation in a chronic form," he says, "differs in *degree*, but not in *kind*, from that which is acute;" and it has the usual terminations of acute inflammation, viz. "effusion of lymph, suppuration, ulceration, and (though more rarely) sloughing." Effusion of serum, the most common result of inflammation, is not enumerated. The following passage will convey a tolerable idea of the author's reasoning powers:—

"Inflammation in the lower extremities may be excited, maintained, and aggravated by a varicose state of the veins. Under these circumstances, the vein being greatly dilated, its valves become unequal to their office, and no longer sustain the column of blood which it contains; the consequent gravitation of this fluid impedes the circulation in the minute venous ramifications: thus arises venous congestion, which necessarily excites increased arterial action, and this being exerted not only on the venous branches which are the seat of congestion, but also on the secerning extremities which terminate in the cellular tissue, there occurs in the latter an effusion of serum. If the limb be continued in the depending position, the inflammation is augmented, coagulable lymph is at length effused, and, if the process goes on, the vascular structure of the part becomes weakened, and ulceration is the consequence. Thus, the two essential conditions of this disease are venous congestion, and increased arterial action."

Venous congestion *necessarily* excites increased arterial action, and this, that is to say, the *arterial* action, is exerted on the *venous* branches, and there occurs an effusion of serum. Verily Scott, thou art a "second Daniel come to judgment."

The remedy for this state of things, we are next told is *mechanical support*, a mode of treatment which the author says was introduced into practice by Mr. Baynton; this, we believe, is a *trifling* error. Even before WISEMAN, who recommended the laced stocking, surgeons were in the constant habit of using mechanical support in the treatment of ulcers of the legs, in order to counteract the effects of the dependant position. Mr. Baynton's method was simply a modification of former plans, adhesive plaster being used, in conjunction with a bandage. Mr. Scott, however, objects to Mr. Baynton's plan of treatment, contending that it does not give uniform support to the limb. He therefore recommends the adhesive strips to be applied to the whole limb. And this is really the whole of the extraordinary and important "secret," which the author says is too important to be confined to an individual. We should think there is not an apothecary's apprentice in the united kingdom, who is not acquainted with this wonderful secret of affording uniform support in cases of ulceration of the lower extremity; and we venture to say there is not one who would have explained its *modus agendi* worse than Mr. Scott has done.

The author, after relating, with tedious minuteness, four cases in which ulcers of the leg were cured by means of supporting the limb, passes on to the consideration of cases which cannot be cured by mechanical support; (we can tell him they are numerous;) and here he recommends the local application of mercury, indulging in the following hypothesis:—

"Mercury, however, when locally applied, has the same power of subduing chronic inflammation as when internally administered, and this without producing its

constitutional effect; hence we may get all the benefit without any injurious effect."

Upwards of thirty pages are occupied with cases, in the treatment of which mercury was used locally, and, as the author asserts, with complete success. The efficacy, it would seem, is equally great, whether there exist a breach of surface or not. In several of the cases, that very remarkable and novel application, the *black wash*, was had recourse to with the most favourable result. Really these secrets *are* too important to be confined to an individual.

We now arrive at that part of the work which treats of diseases of the joints; from which, in fact, the title of the volume is derived. As the author tells us in his Preface, the pathology of the joints has been so fully investigated by various writers, especially "in Mr. Brodie's invaluable work," that little remains to be done, we feel surprised that he should have devoted several pages to this part of the subject, doling out, as he has, the veriest common-place twaddle with such evident self-complacency.

In the directions for constitutional treatment, we have the subjoined lucid intelligence:—

"Even in the most acute stages and most inflammatory forms of the diseases of the joints, there is usually little occasion for general depletion: the relief of the part is nearly all that is required for the removal of the febrile state of the system it may have produced. The only constitutional evacuants that are necessary are purgatives, the choice and management of which depend on the particular disorder of the digestive organs."

And further on:

"When we witness the deleterious influence of marsh air on the human constitution, and the length of time it will last in the form of ague, even after removal from it, it is easy to believe and comprehend the opposite truth, the beneficial influence of a healthy atmosphere."

In speaking of the local treatment, Mr. Scott very shrewdly remarks, that "*if* the joint be in a state of more or less active inflammation, the first object we have in view is to subdue it." But his "experience" leads him to believe that "the probable effect of blood-letting will be better indicated by the state of the constitution, than by the activity of the local disease."

In the chronic stage of diseases of the joint, as observed in our last Number, Mr. Scott objects to the use of blisters, tartar emetic ointment, setons, issues, and moxa; the means he recommends in lieu of them, are, mechanical support, and the external application of mercury, in the manner previously described.

On this we may remark, that, although diseases of the joint may, and indeed do, in their advanced stage, involve all the textures, yet, it is not to be supposed, that under the sweeping designation "chronic disease of the joint," one remedy is universally applicable. There are many cases, we know, in which *uniform pressure* may be usefully employed; but there are others, in which it would be decidedly injurious. Now, Mr. Scott has entirely omitted to show in what kinds of chronic affection the remedies he advocates are especially applicable. We shall not, after the extracts we have given, insult the understanding of our readers, by attempting to show that there is nothing novel in the treatment recommended by Mr. Scott; and in respect to his hypothesis concerning the local action of mercury, it is really so ingenious, that we are almost tempted to leave him in quiet possession. However, we think it right to insert an opinion on the action of mercury, formerly stated in print by Mr. Travers, but subsequently, we are sorry to find, expunged; it was to this effect: "the red oxide of mercury, when applied to an ulcer, is rendered useful, by affording a supply of oxygen to the blood, contained in the vascula minima!"

It is Martinus Scriblerus, we think, who, in his directions for attaining the true genius for the "profound," observes, that it

is necessary to contract the true "*gout de travers*," in order to acquire a most uncommon and unaccountable way of thinking: Mr. Scott will bear this in mind.

We must, however, conclude. The remainder (nearly one half) of the volume is occupied by "cases," which are, for the most part, devoid of interest; and not of any earthly use, except as a means of advertising the author's—"*nest eggs*," as Hudibras expresses it. The work, we perceive, is dedicated to Dr. Farre, "as a token of esteem for the depth of his MEDICAL knowledge, the philosophical STRUCTURE of his mind, and the religious benevolence of his heart." How does it happen that the liquor opii sedativus man, Dick Battley, is not included in the dedication? Has *he* not a "philosophical *structure* of mind," and a "religious benevolence of heart?" "Friend Saunders" also, we think, might have been included, and then, indeed, we should have had a right worthy trio. We can depict to ourselves the inexpressible horror which the pious Dr. Farre must have necessarily felt when he read the word "*structure*;" downright rank materialism, said he, and flew to his constant carriage-companion — Jeremy Taylor.

We have, perhaps, already said more than enough of this trashy volume, but we cannot forbear expressing our unqualified disgust at that portion of the Preface, in which it is contended, that, in most diseases, the treatment is not to be learned from pathology, but requires a separate investigation. Contemptible sophistry indeed, but the drift of it is evident enough; for, after remarking that the late Dr. Baillie, although he knew how to distinguish disease, did not know how to cure it, better than other men; and condemning the French *en masse*, for the minuteness of their pathology, and the "inefficiency" of their remedies, the author, in the very next passage, speaks of the success of his FATHER'S practice!

We do not, in our conscience believe, that a medical work possessing less merit ever issued from the press.

ROYAL COLLEGE OF SURGEONS.

Returns to Orders of the Honourable House of Commons, dated 22 June 1827, for Returns relating to Sums granted or lent; Appropriation and Expenditure; Regulations of Admission to the Hunterian Museum, and to the Library; Education and Examinations; Persons Examined; Fees demanded, &c.

N° 1.—Return of the Sums granted or lent to the Royal College of Surgeons, from the year 1799 down to the present time, by His Majesty's Government, for the purchase of the Hunterian Museum; and for building, purchasing, repairing, or improving, the premises of the said College in Lincoln's-Inn Fields.

The sum of 15,000*l.* granted by the House of Commons on the 13th of June, 1799, for the purchase of the Hunterian Collection, was not granted to the College, but was issued to the executors of Mr. Hunter by the Lords Commissioners of His Majesty's Treasury.

The House of Commons, on the 4th of July, 1806, granted the sum of 15,000*l.* for enabling the College to erect a proper and commodious building for preserving and extending the collection of the late Mr. Hunter, and a theatre for the delivery of public lectures on anatomy and surgery.

The House of Commons, on the 30th of April, 1810, granted to His Majesty the sum of 12,500*l.* to be paid to the Court of Assistants of the Royal College of Surgeons in London, to enable them to complete the erection of a museum and theatre, with an appropriate front, in Lincoln's-Inn Fields.

N° 3.—Return of the Appropriation and Expenditure of the Sums granted or lent to the Royal College of Surgeons, from the year 1799 down to the present time, by His Majesty's Government, for the purchase of the Hunterian Museum, and for building, purchasing, repairing or improving the premises of the said College in Lincoln's-Inn Fields.

The sum of 15,000*l.* granted for the purchase of the Hunterian Museum, was issued by the Lords Commissioners of His Majesty's Treasury to the executors of Mr. Hunter.

The two sums of 15,000*l.* and 12,500*l.*

granted to the College for enabling them to erect a museum and theatre, with an appropriate front in Lincoln's-Inn Fields, have been expended in the erection of such building, together with the additional sum of 30,500*l.* and upwards, from the funds of the College,

N°. 3.—Return of the regulations under which Members of the College, Students in Surgery, or other persons, are admitted to the Hunterian Museum.

Among the conditions on which the Hunterian Museum was delivered to the care of the late Corporation of Surgeons, is the following, relating to admission:

The collection shall be open four hours in the forenoon, two days every week, for the inspection and consultation of the Fellows of the College of Physicians, the Members of the Company of Surgeons, and persons properly introduced by them; a catalogue of the preparations, and a proper person to explain it, being, at those times, always in the room.

The Board of Curators of the Museum have subsequently directed,

That the Museum be open on every Monday and Friday from twelve until four o'clock:

That licentiates of the Royal College of Physicians of London; graduates in medicine of any of the universities of the united kingdom; and regularly admitted members of any of the legally constituted Colleges of Surgeons in the united kingdom; be allowed the privilege of admission to the Museum, on such days, and during such hours as it shall be opened for general exhibition, upon entering their names in the book provided for that purpose:

That surgeons and assistant surgeons in the army, ordnance, navy, and East India Company's service, be allowed the privilege of admission to the Museum on such days, and during such hours as it shall be open for general exhibition, upon entering their names and respective ranks in the book provided for that purpose:

That scientific foreigners be admitted to the Museum at any time when circumstances shall preclude their admission on the days of public exhibition.

The Fellows of the Royal College of Physicians of London, and the Members of this College have the privilege of introducing visitors to this Museum.

N°. 4.—Return of the regulations under which Members of the College of Students in Surgery are admitted to the Library of the Royal College of Surgeons.

The library is not yet sufficiently ample to admit of its being opened for public purposes.

A classified catalogue, up to the present period, has been prepared, and every exertion is making for the completion of the library, which will be opened for its intended public uses by the 1st of January next.

The Council of the College of Surgeons humbly submit to the Honourable the House of Commons, that the Hunterian collection did not comprise any printed books; and that the Library of the College has been gradually collected, subsequently to the reception of the Hunterian Collection, from the funds of the College, aided by donations.

N° 5.—Return of the existing regulations respecting Education and Examination by the Court of Examiners.

By-Laws of the College.

Sect. 16, Parag. 1.—No person under twenty-two years of age shall be admitted a member of the College.

Parag. 2.—No person shall be admitted to an examination for the diploma, without producing to the Court of Examiners satisfactory evidence of his anatomical and chirurgical education.

Standing Orders of the Court of Examiners,

Relating to the professional education and examination of candidates for the diploma of the Royal College of Surgeons in London.

1. The only schools of anatomy, physiology, and surgery, recognised by this Court, are London, Dublin, Edinburgh, Glasgow, and Aberdeen.

2. Attendance upon the chirurgical practice of an hospital will not be recognised by this Court, unless such hospital be in one of the above schools, and shall contain on an average one hundred patients. This Court will, however, recognise attendance on provincial hospitals, containing, respectively, one hundred patients, provided a student shall have previously attended two courses of lectures on anatomy and physiology, and two courses of dissections and demonstrations, in any of the above recognised schools. The attendance on such provincial hospital shall be of twice the duration of that required at hospitals in any of the recognised schools.

3. The certificates required by this Court shall express the dates of the commencement, and of the termination of attendance on each course of lectures, and of dissections, and the periods of the commencement and of the termination of attendance on the hospital practice.

4. The required certificates shall be delivered at the College ten days, at least, prior to the day on which candidates shall be desirous of admission to examination.

The following are the certificates required of candidates for the diploma of this College, and which are to be delivered ten days prior to examination, conformably to the Standing Order, 4.

1. Of being twenty-two years of age.

2. Of having been engaged six years, at least, in the acquisition of professional knowledge.

3. Of having regularly attended three or more winter courses of lectures on anatomy and physiology, delivered at subsequent periods, and also one or more winter courses of lectures on the principles and practice of surgery.

4. Of having performed dissections during two or more subsequent winter courses, and of having attended, during the same period, anatomical demonstrations.

5. And of having diligently attended, during the term of at least one year, the chirurgical practice of one or more of the following hospitals: viz. St. Bartholomew's, St. Thomas's, the Westminster, Guy's, St. George's, the London, and the Middlesex in London, the Richmond, Stevens's, and the Meath in Dublin; the Royal Infirmary in Edinburgh, the Royal Infirmary in Glasgow, or the Royal Infirmary in Aberdeen, or of twice that term in any of the provincial hospitals, conformably to the Standing Order 2.

Persons under the following circumstances, and of the required age, shall be admissible to examination for the diploma of this College.

Members of any of the legally constituted Colleges of Surgeons in the United Kingdom.

Graduates in medicine of any of the Universities of the United Kingdom, who shall have attended lectures on the principles and practice of surgery, performed dissections, and attended demonstrations as required, § 3 and 4, and who shall have attended the practice of an hospital as described, § 5.

That from and after the 1st day of January, 1828, every candidate for the diploma of this College will be required to produce certificates of having attended one course of lectures on chemistry, and also two courses of lectures on the obstetric art and science, delivered by competent teachers, in addition to the certificates of professional education at present required.

The established regulation is, that every candidate for the diploma shall be examined singly, in the presence and in the hearing of the whole Court; and each Examiner is at liberty to ask the candidate such questions as he shall judge proper; and the practice is, that upon the conclusion of the examination, each candidate is desired to withdraw, when the president takes the sense of the Court as to the fitness and capability of such candidate to exercise the art and science of surgery.

N° 6.—Return of the Number and Distinction of Persons examined at the General and Extra Courts of Examiners, during the years 1825 and 1826; distinguishing those admitted from those rejected.

	1825:	1826:
Articled Students	30	25
Passed for the Diploma	342	367
Rejected for the Diploma	25	30
Passed as Army Surgeons	8	2
Rejected as Army Surgeons	1	—
Passed as Army Assistants	1	1
Rejected as Army Assist.	—	1
Passed as Naval Surgeons	6	13
Rejected as Naval Surg.	—	1
Passed as Naval Assistants	20	14
Rejected as Naval Assist.	7	2
Passed as Surgeon to Indiaman	—	—
Rejected as Surgeon to Indiaman	—	—
Passed as Mate to Indiaman	2	2
Rejected as Mate to Indiaman	1	1

N°. 7.—Return of the amount of the fee demanded in each case in which any fee whatever is payable to the College of Surgeons, or any officer thereof.

On the admission of each member on the Council of the College £21 0 0

On the admission of each member, from the said Council, on the Court of Examiners..... £21 0 0

On the articling of each student of the art and science of surgery..... £10 10 0

This sum is deducted from the fee for the diploma, when such student is admitted a member of the College.

On the grant of the diploma to a member of the College on his admission £22 0 0

On the grant of a certificate of qualification as surgeon in the army, navy, or East India Company's Service, as authorised by the Admiralty, War Office, and Directors of the East India Company £5 5 0

This sum is deducted from the fee for the diploma, when any such surgeon is admitted a member of the College.

On the grant of a certificate of qualification as assistant-surgeon, or mate, in the army, navy, or East India Company's Service; as authorised by the Admiralty,

War Office, and Directors of the East India Company £2 2 0
By each person examined at a special Court of Examiners £5 5 0
On the grant of the diploma to the beadle of the College £0 5 0
On the release of a member of the College £10 10 0

By Order of the Council of the Royal College of Surgeons in London,

EDMUND BELFOUR, Sec.
June 27, 1827.

WESTMINSTER MEDICAL SOCIETY.

March 22, 1828.

Dr. SOMERVILLE in the Chair.

DISEASES OF THE HEART.

Mr. WADE introduced the subject, by briefly recapitulating the various cardiac diseases, from simple inflammation of the membranes, to the most marked organic changes, speaking of their diagnostic signs, and of the treatment, and also relating various cases in illustration.

The discussion which ensued was of a very promiscuous kind; the principal speakers were Dr. Barry, Dr. Milligan, Dr. Johnstone, Mr. Lambert, and Mr. Skene.

The only point in the debate, especially worthy of notice, was in respect to the intermission of the pulse; it was contended, on the one hand, that this symptom results from ossification of the mitral valve, on the other, it was said, that it more frequently depends upon an ossified condition of the aortic valves. It seemed, however, to be universally admitted, that the intermission of the pulse is not an infallible criterion of either disease—that it often exists apparently as the result of mere functional disturbance.

The subject being so comprehensive in its nature, a wish was pretty generally expressed, that it should be renewed at the ensuing meeting, but this could not be complied with, as Mr. Bingham will then bring forward a paper on—"Burns and Scalds."

LONDON MEDICAL SOCIETY.

March 24, 1828.

Dr. HASLAM, President, in the Chair.

Mr. AMESBURY commenced the business of the evening, by giving a brief summary of the previous debates on the subject of fractures of the thigh. He contended, that nothing which he had advanced had been controverted. He had endeavoured to demonstrate that neither the short splints, nor the long splint of Boyer or Dessault, the fracture box, nor the plan of treatment called Pott's, were capable of answering the four indications which it had been admitted were necessary to be fulfilled. The supporters of the old plan of treatment had not made a stand at the principles, but argued upon the plea of experience. And what! is this the result of their experience? said Mr. Amesbury; why, confessedly, that deformity very frequently occurs. Indeed he did not think, that non-union was so rare a circumstance as some persons had stated.

Mr. Amesbury then alluded to a case of fracture of the olecranon, complicated with fracture of the inner condyle of the humerus; a case mentioned by Mr. CALLAWAY at a former meeting of the Society. If such an accident fell under his (Mr. Amesbury's) treatment, he would place the arm in a bent position. In the extended position, he considered, that the only advantage gained would be the relaxation of the triceps, an indication certainly of great importance, but one that might safely be dispensed with under the peculiar circumstances; for, if the arm were placed in the straight position, the inner condyle would be displaced, and a degree of deformity supervene, which might occasion great impediment to the motions of the joint, after union was completed. According to Mr. Amesbury, the most important point to be gained was the union of the condyle in its natural position, and this he thought might be accomplished by means which would insure a short ligamentous union of the olecranon. And if the condyle were united in its proper position, with a short ligamentous union of the olecranon, the patient would obtain the same degree of flexibility, and nearly as much power in the joint, as before the accident. Mr. Amesbury then referred to a diagram which shewed the application of his apparatus, in fracture of the humerus, explaining the manner in which it supported the condyles, and, at the same time, preventing retraction of the olecranon. He further said, that he did not advocate the bent position, when the olecranon was fractured alone, but when the injury was conjoined with fracture of some part of the os humeri. He had under his care, some years ago, a case of fracture of the olecranon with fracture of the lower part of the humerus; the bent position was adopted, with the use of the apparatus, and he had effected so close an union of the olecranon, that he believed it to be united by bone. Mr. Amesbury concluded by demonstrating, experiment

ally, the inadequacy of the short splints in maintaining the coadaptation of the extremities of a fractured humerus, and exhibiting his own apparatus for this purpose.

Mr. SHEARLEY thought that surgeons did not sufficiently attend to the constitutional treatment, in cases of non-union: the withholding of a customary portion of diffusible stimulus, he said, seen in one case as the very evident cause of a want of union.

After a few observations from Mr. DERMOTT, respecting the relative state of the muscles of the thigh in the positions of flexion and extention, Mr. KINGDON addressed the Society. He (Mr. Kingdon,) thought that for many years past, the treatment of fractures had been gradually improving; but he considered that Mr. Amesbury had made a "grand step" towards perfecting the treatment. But, at the same time that he allowed very great credit to Mr. Amesbury, admitting that he had rendered a most essential service to the profession and the public, still he could not coincide in the opinion of the entire novelty of that gentleman's plan.

The discussion on fractures having thus concluded, Mr. Kingdon briefly detailed the morbid appearances, presented by the brain of a young female, which he had recently inspected; Mr. Kingdon said, that he was unacquainted with the symptoms during life, but would obtain and submit them fully to the Society; to which occasion we shall defer noticing the appearances on dissection.

A sort of conversational debate ensued, in which Dr. RAMADGE and Mr. LAMBERT took a principal part; the latter gentleman, relating the condition of the brain and spinal marrow, in a case of traumatic tetanus, which proved fatal in ten hours. Mr. Lambert having observed, on the authority of Dr. PARRY, strengthened by his own experience in several cases of tetanus, that the danger is always imminent where the pulse is quick. Dr. Ramadge remarked that he had seen two cases of tetanus, in each of which the pulse was at 120 for some time, and yet both recovered. In one of these cases, croton oil was given with the most marked benefit.

MEDICO CHIRURGICAL SOCIETY:

March 25, 1828.

Mr. TRAVERS, President, in the chair.

THE SECRETARY read a continuation of Mr. Brodie's paper, on injuries of the head, embracing the treatment of concussion, of compression by bone, and from extravasation of blood.

In respect to concussion it was remarked that although two modes of treatment, which are directly opposed to each other, are advocated, yet there is not much real difference of opinion; the *depletory* plan of treatment being imperatively necessary in one stage, whilst it is highly injurious in another—the same remark was said to apply to the *stimulating* practice. It was observed however, that in many cases, blood-letting is carried to an injurious extent in injuries of the head, that it is often repeated from day to day, and yet the cerebral disturbance continues, when, by an opposite method of treatment, the symptoms yield. The author of the paper spoke of the preceding circumstances, as occurring frequently with hysterical young women.

In considering the treatment of compression, resulting from the extravasation of blood, Mr. Brodie observed, that the sanguineous effusion on the dura mater generally takes place at the *site* of the meningral artery on either side, and that it is advisable to "*trephine on speculation*"—that if we do not find extravasation, "the patient is in no worse condition than before." Mr. Brodie thinks there are some circumstances, which would render the puncturing of the dura mater an advisable measure, as for instance where, being exposed either by injury or trephining it, it is seen to "bulge." A case was detailed, which occurred in the practice of Mr. Ogle, of Great Russell-street. A woman having fallen into a celler, was picked up in a state of insensibility, and clearly suffering from compression of the brain; the head was shaved, but there was no perceptible depression of bone; there was, however, much tenderness evinced on making pressure at a particular part of the skull. This induced Mr. Ogle to remove a portion of bone, when he found the dura mater pushed up, evidently from the effusion of fluid beneath; he punctured the membrane, and a large quantity of blood issued to the immediate relief of the patient. In trephining the skull, in cases of supposed extravasation on the dura mater, Mr. Brodie recommended that the opening in the bone should be equal to the extent of extravasation; and, in illustration of the injurious effects resulting from an opposite method being adopted, a case was related in which the opening being made small, the granulations speedily blocked up the orifice, and thus prevented the exit of purulent matter, the patient, in consequence, lost his life, from extensive accumulation of pus, on the dura mater.

Mr. Brodie is "inclined to doubt" the accuracy of Sir A. Cooper's opinion of the necessity of elevating the bone in *all* cases of compound fracture of the cranium with depression, although he admitted that, as a

general rule, it held good. Several cases were detailed, which fell under the observation of Mr. Rose in the Peninsular war, and where, owing to peculiar circumstances, there was no opportunity afforded of elevating the bone, yet the patients did well.

A Member objected to that part of the treatment, in which Mr. Brodie recommended the removal of bone to the extent of the effused blood. After some trivial observations from Dr. Johnstone, and the passage alluded to, having again been read, the President remarked, that he did not consider the author of the paper intended his expression to be taken in the fullest sense, but that he wished to state his conviction of the necessity of making a very free opening, so that it might not close by granulation, as in the case alluded to, and thus prevent the exit of matter.

Dr. Foster wished to learn from the Members, whether they had seen any cases of injury of the head, followed by obliteration of memory.

A Member called the attention of the Society to a fact which had escaped the notice of the author of the paper, namely, the state of continued sleep, under which patients sometimes labour after injuries of the brain—he had seen two cases of this kind, in one of which, there was profound sleep for 16 days, and in the other instance, for nearly three weeks.

Some further observations were made in respect to the practice of blood-letting, in the stage of collapse, and a case was adduced, in which the patient was supposed to have fallen a victim to this absurd method. The president said, that he thought the old practice of bleeding, merely because there was injury of the head, was pretty nearly exploded—the treatment, in all cases, must of course be adapted to existing symptoms.

GUY'S HOSPITAL.

THE OPERATION OF LITHOTOMY, BY MR. BRANSBY COOPER, WHICH LASTED NEARLY ONE HOUR!!*

We should be guilty of injustice towards the singularly-gifted operator, as well as to our numerous readers, if we were to omit a "full, true and particular" account of this case. It will, doubtless, be useful to the country "draff," to learn how things are managed by one of the privileged order—a Hospital surgeon — nephew and surgeon, and surgeon because he is "nephew."

The performance of this tragedy was nearly as follows.

Act 1. The patient* (a labouring man from the county of Sussex, thick set, ruddy and healthy in appearance, and 53 years of age) was placed on the operating table, at a few minutes past one o'clock, on Tuesday the 19th. The only one of the surgical staff present, besides the operator, was Mr. Callaway. The ceremony of binding the patient we need not detail; the straight staff was introduced, and was held by Mr. Callaway. The first incision, through the integuments, appeared to be freely and fairly made; and after a *little* dissection, the point of the knife was fixed (apparently) in the groove of the staff, which was now taken hold of, and the knife carried onwards—*somewhere*. A small quantity of fluid followed the withdrawal of the knife; the forceps were now handed over, and for some time attempted to be introduced, but without effect. "I must enlarge the opening," said the operator, "give me my uncle's knife;" this intrument was given, and a cut was made with it, without the staff being re-introduced. The forceps were again used, but as unsuccessfully as before; they were pushed onwards to a considerable distance, and with no small degree of force. "It's a very deep perineum," exclaimed the operator. "I can't *reach the bladder with my finger.*"

Act 2. The staff re-introduced, and a cutting gorget passed along it—various forceps employed: a blunt gorget—a scoop—sounds and staves introduced at the opening in the perineum. "I really can't conceive the difficulty—Hush! Hush! Don't you hear the stone?"—"Dodd (turning to the Demonstrator), have you a long finger? Give me another instrument — Now I have it! Good God! I can hear the stone when I pass the sound from the opening, but the forceps won't touch it—O dear! O dear!"

Such were the hurried exclamations of the operator. Every now and then there was a cry of, Hush! which was succeeded by the stillness of death, broken only by the horrible squash, squash, of the forceps in the perineum. "Oh! let it go—pray let it keep in," was the constant cry of the poor man.

This act lasted upwards of half an hour; the former upwards of twenty minutes. The stone was eventually laid hold of, and never shall we forget the triumphant manner in

* The following passage occurs in John Bell's great work on surgery.—"*Long and murderous operations, where the surgeon labours for an hour in extracting the stone, to the inevitable destruction of the patient*"

* The poor fellow, who has left a wife and six children, said, that he "came to town to be operated upon by the 'Newey' of the great Sir Astley."

which the Assistant Surgeon raised his arm and flourished the forceps over his head, with the stone in their grasp. The operator turned to the students and said, "I really can't conceive the cause of the difficulty." The patient being upon the table, bound, whilst the operator was "*explaining.*"

The man was put to bed much exhausted, but rallied a few hours afterwards, and leeches were applied, in consequence of tenderness of the abdomen. He passed a restless night, was in great pain, and was bled from the arm on the following morning. Leeches were applied in the afternoon, and at about seven o'clock in the evening, death ended the poor fellow's sufferings, about 29 hours after the operation.

Examination of the Body.

There was a very large and sloughy wound observable in the perineum, and the scrotum was exceedingly dark coloured, from ecchymosis. The finger could be passed to the prostate without difficulty, which was not deeply situated; indeed, it was the declared opinion of Dr. Hodgkin and Mr. Key, that the man *had not a "deep perineum."* The whole of the cellular tissue throughout the pelvis was easily lacerable, and this was especially the case with the portion between the bladder and rectum, admitting of the passage of the finger with great facility, and to a considerable distance. There was a tolerably fair lateral section of the prostate and neck of the bladder. The gland itself was larger than natural, and the portion which is designated the third lobe, presented a singular appearance, being of the size of the tip of the little finger, and forming a kind of valve at the neck of the bladder; part of this third lobe had a dark-coloured appearance, and it seemed as if some substance had been resting upon it. The bladder itself presented nothing remarkable.

The peritoneum lining the abdominal parietes was highly vascular, and there was a slight quantity of turbid serum in the cavity of the abdomen. The kidneys had a mottled appearance throughout their cortical substance.

There are two or three points in this case to which we beg particular attention; first, the statement of Mr. B. Cooper, at the time of the operation, that he "*could not reach the bladder with his finger,*" as contrasted with the fact of the bladder being very readily reached in the post-mortem examination; the man not having a deep perineum. Secondly, the circumstance of the finger passing with facility, between the bladder and rectum to a great depth, as considered in connexion with another declaration of Mr. Cooper, that he could not feel the stone with the forceps, until the time of its extraction, although a sound, passed into the bladder downwards, from the penis, struck upon the stone; as was the case also, on one or two occasions, when a staff was passed at the perineal opening.

The surface of the calculus was rather larger than the disc of a shilling, flat, oval-shaped, and apparently consisting of lithic acid.

ATTENDANCE OF DR. FORBES AND MR. GUTHRIE AT THE WESTMINSTER HOSPITAL.

To the Editor of THE LANCET.

SIR,—Having acted as house-pupil, during the season of 1823 and 1824, at the Westminster Eye Infirmary, I feel it incumbent upon me, after the remarks you have repeatedly made, to state, that during that time, nothing could exceed the attention Dr. Forbes and Mr. Guthrie paid to that Institution. I can corroborate what Mr. Guthrie says, in his letter, regarding the punctuality of his attendance; and I have frequently known him to call at the Infirmary on the intervening days. The patients were satisfied and grateful, and the pupils pleased, with the clinical instruction given. I regret the rupture between Dr. Forbes and Mr. Guthrie, convinced that it must tend to injure the Institution.

I hope you will insert this note in your next publication, as your remarks implied a neglect of duty on the part of the medical officers, which, I am sure, at that time had no foundation.

I remain, Sir,
Yours, &c.
HENRY DUNN.

Wakefield, March 18, 1828.

END OF VOL. I.—MDCCCXXVII—VIII.

Mills, Jowett, and Mills, Bolt Court, Fleet Street.